



THE AMERICAN FARMER:

DEVOTED TO
Agriculture, Horticulture and Rural Economy.

(ESTABLISHED 1819.)

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." *Virg.*

Sixth Series.

BALTIMORE, SEPTEMBER, 1866.

Vol. I.—No. 3.

SEPTEMBER.

"Hence from the busy, joy-resounding fields,
In cheerful error, let us tread the maze
Of Autumn, unconfined: and taste, revived,
The breath of Orchard, big with bending fruit.
Obedient to the breeze and beating ray,
From the deep-loaded bough a mellow shower
Incessant melts away."

Farm Work for the Month.

TOBACCO.

The cultivation of the growing crop will have been completed, and what remains is to have it put in proper condition into the houses. Of course this includes the necessary work immediately preceding—the clearing the plants of every worm, that they be not ragged by them after being taken to the house, and the breaking out carefully every sucker that may have started from the foot of the leaves. If fire is to be used in curing, there will not be the same necessity for destroying the worms that may be on the plants when fit to go to the house, as the heat will effectually dislodge them.

The topping may continue, as the leaf advances, up to the 20th of the month, when all should be topped that remain, down to leaves of six inches in length. The leaves will thus have time to make good length, and to ripen up pretty well, by the 10th of October, when all should be cut. No more of the crop should be cut on any day, than can be properly handled and put away in the house, within the twenty-four hours. The cutting for the day should begin after the dew is entirely off, when it may very soon be handled and taken to the house. The single plants may, in a very short time, be put into small heaps of

an armful, and taken early from the field, if the sun be very hot, lest the outer leaves be scalded. In the afternoon, before the dew falls, enough should be cut to employ the hands, till the dew is off next morning, in hanging away in the house. It should not be allowed to lie all night in large heaps.

See that in hanging in the house, the plants are not crowded on the stocks, nor the sticks closely jammed together. They should have ample room, to avoid the plants touching when the leaves have wilted. Otherwise there will be what is known as "house-burn"—the destroying of the tissue of the leaf and its turning black and worthless.

THE CORN FIELD.

If any portion of the fodder is to be saved by the old method of topping and blading, it must now be done as it begins to yellow at the bottom. This practice is at great expense, no doubt, of the weight of grain, and is, apart from this, an expensive mode of saving fodder. A lot of good timothy would prove much cheaper provender. The blades, however, if properly saved, make very fine food for working or driving horses in the heavy work of spring and early summer, and many are still unwilling to dispense with them.

Any portion of the corn field that is to be seeded in wheat, should be cut off at the ground as early as the condition of the corn will allow, and set up in stooks.

WHEAT SEEDING.

Let every preparation be made to get the wheat crop promptly seeded at such time as you may determine on. The red wheats are very frequently sown as early as the first of the month, and the only drawback to the sowing of this, or

any other sort so early, is the fly. If there seem to be special danger of that, the seeding may be postponed to the 5th of October, but we are more and more impressed with the belief that the reasons in favour of September sowing far outweigh the risk from fly.

Corn land should be seeded, with only enough stirring of the surface to give the grain a shallow covering. If there be not too much grass to work the drill, the best practice is to put it in with the drill, without the use of plough or cultivator.

SFED.

Sow none but the cleanest and best seed, and even with this, take the precaution of washing, and soaking for some hours in strong brine. Let the seed fall slowly and gently into the brine, and quietly stirred, that smut balls, and all light matter may float. When thoroughly washed and soaked even for a few, or as many as twelve hours, if you choose, the seed must be drained and dried with fresh lime. This is a sufficient preparation of clean seed, and foul should not be used.

MANURING.

It should be understood as worse than folly, to undertake to make a crop of wheat without manure, on any ordinary ground, except a well set clover, or pea-fallow, and fortunately we need not be at a loss in finding good fertilizers that will bring land of only medium fertility up to the necessary standard for a good crop. Whatever may be proposed in the way of manuring the crop, we should not fail to give say, fifty pounds of some portable fertilizer to the acre, applied in the drill, using the remainder broadcast. The application in the drill is not likely to be sufficiently appreciated except by those familiar with it. Its value consists in the direct and immediate impulse given to the young crop in the fall, a point which we have repeatedly dwelt upon, as of the greatest importance.

RYE.

Rye should be sown without delay, if practicable. On light, coarse sands, it may be found a more profitable grain than wheat, but on all ordinary soils, with this exception, where a fertilizer may be commanded, wheat will be found the more profitable crop. In any case, however, we should sow a small lot, proportioned to the stock on the farm, for green food in early spring. The earlier in spring that stock can be supplied with green food the better, and nothing is more suitable than rye, which may be cut two weeks at least in advance of clover. For this purpose, sow two bushels of seed to the acre, but for grain, one bushel is sufficient.

TIMOTHY.

Timothy may be sown now, or at any time until hard frost, but the sooner the better, if sown by itself, and a crop be wanted next season.

The Vegetable Garden.

Prepared for The American Farmer, by DANIEL BARKER, Maryland Agricultural College.

SEPTEMBER.

The garden will soon begin to assume its autumnal aspect. Lose no time in removing all weeds, which, after the copious showers we had during the month of July, will be very abundant. Remove all decaying vegetable matter. Plant up all vacant ground, and at the end of the month clear ground for plowing and trenching during the fall and winter months.

BEANS.

Continue to earth up and keep clean from weeds, the late crops.

BEETS.

The early crops may be taken up towards the end of the month—storing them for the present in a dry, airy place.

CABBAGE

May now be sown to stand the winter, for spring and early summer crops. Any of the early hardy kinds will do, such as large early York, early Wakefield, early Winnigstadt. This is not quite as early as some other kinds, but we consider it one of the very best cabbages grown, frequently succeeding when all others fail.

CAULIFLOWER.

Sow for early spring and summer use, not later than the 25th. "Jenormande Mammoth" is the most reliable of any kind which we have grown.

CHEERY.

Continue to earth up advancing crops.

COLEWORT OR "GERMAN GREENS."

Sow during the first ten days, for a crop to come in late in the winter and early in spring.

ENDIVE.

Continue to sow the green curled early in the month, and plant out those which are strong enough from previous sowings—some from the early. Any that may run to seed should be pulled up, and their places supplied by others.

LETTUCE.

Sow during the first ten days for a crop to come in during the winter. Plant out on vacant

ground and keep the ground well worked. We are so well pleased with the kind named in our last month's operations that we do not intend to cultivate any other.

ONIONS.

When the stalks begin to turn yellow and fall down, take them up or they will produce fresh roots, and of any, which still exhibit a luxuriance of growth, break down the leaves.

RADISH.

The Black Spanish and winter Chinese Rose may now be sown for winter use.

SPINACH.

Make a sowing of the prickly about the middle of the month for spring use.

TURNIPS.

Thin and hoe advancing crops.

POTATOES.

All those which show any signs of maturity by the decay of the stems should be taken up and stored.

The Fruit Garden.

HARDY FRUIT

Gather as soon as ripe, which may be known by the color of the seeds, and by the stem parting readily from the tree. Gather with great care, and keep apart from the best all that may fall in the process. Gather only in dry weather, and store at once. The fruit store should be in a dark place, capable of being freely ventilated, yet generally admitting but a trifling current of atmosphere; and it should be cool yet safe from frost.

STRAWBERRIES

In pots for forcing should now have well formed, plump crowns. If the crowns are thin and weak, place the pots in a warm place and assist with weak liquid manure.

FRUIT TREES IN POTS,

Towards the end of the month, should have small supplies of water, and full exposure to the sun, near a fence facing the south, where the heat will be reflected on them, and they will ripen more wood well. Any trees, in a green and sappy state, may be laid on their sides and be sprinkled every morning; this will check growth without distressing them, and help to coax them into rest. Get ready for potting, planting out any from the pots or orchard house, as when the fall comes, there will be extra pressure of work and many important jobs of planting and potting may be delayed to the injury of next season's

produce, unless pots, composts, &c., are all ready in good time. Those not re-potted should have the top soil of the pots removed and its place supplied with fresh turfy soil, and rotten dung heaped up around the stem of the tree.

The Flower Garden.

"Ye flowers of beauty, pencilled by the hand
Of God, who annually renews your birth
To gem the virgin robes of nature chaste.
Ye smiling-featured daughters of the sun,
Fairer than queenly bride by Jordan's stream,
Leading your gentle lives retired, unseen,
Or on the sainted cliffs of Zion's Hill.
Wandering and holding, with the heavenly dews,
In holy revelry, your nightly loves,
Watched by the stars, and offering every morn,
Your incense grateful both to God and man."

BEDDING PLANTS.

Verbenas, Geraniums, Heliotropes, &c., should have every necessary attention to keep them in proper order. Do not allow seeds to ripen, or the plants will decline in bloom; therefore remove them promptly, and serve a two-fold purpose thereby.

Take cuttings of "Zonale," and other Geraniums, for planting in the borders next spring. Plant them in pots, or boxes, where they can remain all winter. Use a rather poor sandy soil, in order to check a too rampant growth and harden the wood.

CARNATIONS, PINKS, &c.,

Which have been layered, as soon as well rooted, should be transplanted or potted in sandy soil. Avoid all stimulating manures for this class of plants, as they should not be encouraged to make much growth during the winter months. If potted, place them in a shady place for a few days. Plant out the old stock plants into borders, where they will produce an abundance of flowers next summer. Keep the beds of young ones well worked, and perfectly free from weeds.

GLADIOLA

In pots, when the bloom is declining, should have but little water when the foliage shows signs of decay. Lay the pots on their sides, in the full sun, to promote their ripening. Those in the borders will take care of themselves till time to take them up.

LILIUMS

Grown in pots treat the same as recommended for Gladiola. When the foliage begins to fall lay them on their sides.

MIGNONETTE

For flowering in winter, may be sown now, in

about four inch pots, using a good light red soil, and placing the pots in a partial shade until the plants are fairly up.

ROSES

May now be propagated by planting cuttings in a light sandy soil, where they can be protected during the winter; any of which have been budded this season, will now require to be looked over, the wild growth cut in slightly, the ties loosened, and any shoots below the buds rubbed off. Roses struck from cuttings should be potted off soon as rooted. Roses layered in the open ground should be transplanted into good rich soil as soon as sufficiently rooted to be removed. If planted in the open border, they will need protection during the winter months.

VIOLETS,

For bloom during the winter and early spring, should be taken up now, with good balls of earth, and potted in four or five inch pots, in a mixture of leaf mold and sandy loam, placing them in a shady place until well established.

Propagate all sorts of plants that are likely to be wanted for next year as early in the month as possible. As soon as rooted pot them off or place in boxes, as recommended above. Keep them in a close place for a week or two and then expose them to the weather until placing them in their winter quarters.

Lawns and Parks.

Nothing looks neater than a well-kept lawn or park, its thick sward of velvety grass, smooth and well-trimmed. Many lawns are spoiled by being crowded with large, deciduous trees, the overspreading branches of which prevent evergreens and other choice trees and shrubs from developing themselves fully. Who has not seen the leading shoot of a Norway spruce, arbor vite, or balsam, destroyed by the overhanging drip, shading or chafing of a maple, poplar or elm? It is better to cut down such intruders, or at least to prune them severely, than to have fine evergreens, etc., spoiled. A few choice specimens of evergreens and flowering shrubs, with an occasional lime oak or purple beech, and plenty of space between them for a large expanse of grass, with flower beds cut out of it, looks better than a crowd of trees, shutting out the sun and hiding the view of everything. Some lawns and parks are spoiled by having too coarse a variety of grass sown in them, which never makes a good sward. There is nothing better for a lawn, park or grass plat than a mixture of June-grass, *Poa pratensis*, sweet-scented vernal grass, *anthoxanthum odoratum*, and white clover,

trifolium repens. The latter grows rapidly and forms a thick sward, but it is apt to choke out other plants, to require cutting too frequently, and also to fade in the autumn. For these reasons only a small quantity should be sown. The grass in lawns, parks, etc., should be frequently mowed during the season, in order to keep the sward in proper trim, and to prevent the grass from injuring the trees, shrubs and flowers. If it is left until fit for a hay crop, it will spoil the lower branches of evergreens, and encroach on and overspread flower beds.—*Ex.*

Deterioration of Seed.

A correspondent in Washington county, Maryland, referring to the enemies of wheat in his region, adds: 'In addition to these enemies, a formidable difficulty arises from the repeated use for a series of years of the same variety of seed on the same soil, in the same locality. Each variety of wheat seems to do well here for a series of eight or ten years, then it seems to languish and become more liable to injury from the Hessian fly, the rust, or smut, &c. Whether the declension in the crop is attributable to the fact that each variety of wheat exhausts so much of some particular constituent of the soil that it can no longer flourish as at first, or whether the wheat deteriorates from neglect, inattention, or mismanagement of the farmer, I am unable to determine. Prior to 1836 our farmers had used varieties which failed totally that year to make a remunerative yield. Soon after, some wheat was imported from the Mediterranean, which for some ten to twenty years was cultivated here almost exclusively. In 1858 the crop failed almost entirely. The Lancaster wheat was then introduced, and has been successfully cultivated ever since. This year the 'Lancaster' has suffered much from 'fly'; some also from rust. At seed time last fall we had a dry spell, so that wheat came up badly. That which was sown first and came up well was damaged by 'fly'; the later sown was injured by rust. We estimate our crop this year to be about a half crop; the quality of that which ripened early is good; the later wheat was injured by rust.—*Report of Commissioner of Agriculture.*

QUALITIES OF A GOOD WORKING OX.—Let him have large nostrils, a long face, a bright hazel eye, which will indicate docility and intelligence; a hoof rather long and not turned outward very much, a straight back, a broad breast, white gambrel, small tail, and horns of medium size. When you find such an ox as that, he will be a good worker.

For the American Farmer.

The Pine Hills of Georgia.

As many thousands of Northern people are contemplating emigration to the South, any trustworthy information in regard to the country, and its soil, climate, productions, and capabilities, must prove interesting and valuable. In this belief, I desire to contribute my mite toward the enlightenment of the public on these subjects.

Having formerly resided in several of the Southern States, and traveled extensively in others, I might volunteer to give a general description; but, I think, a closer view of a particular region, will be far more satisfactory and useful to the reader, who must bear in mind, however, that in setting forth its advantages, I do not desire to depreciate those of any other locality. Desirable places, in which to settle, abound in all the Southern States.

I have lately returned from a tour through a portion of Middle Georgia, which I have visited for the special purpose of examining it with reference to fruit culture, and I will confine my remarks to the particular neighborhood which seemed to me, all things considered, best suited to the wants of a settlement of fruit-growers, and which I have selected as the scene of my own future operations in that department of horticulture, though the description will apply, in the main, to a large part of Middle Georgia and the adjoining States.

The region to which my remarks have special reference, and which I have called "The Pine Hills," in contradistinction from the level pine lands of the "low country," and the oak hills of the "Upper Country," comprises portions of the counties of Richmond and Columbia, and is intersected by the Georgia Railroad, which connects Augusta with Atlanta. It is, strictly speaking, an undulating country; the elevations reaching an altitude of three hundred feet above the Savannah river, and gradually sloping to the beautiful fertile valleys which intervene, producing a scenery every where pleasant, and in some places exceedingly picturesque.

The soil of the hill-land is sandy light colored, and only moderately fertile. In the valleys it is richer and darker; and some of the bottom-lands, bordering the creeks, can boast a soil equal to that of the river valleys of the West. These bottom-lands are, however, of limited extent.

The summits of the hills generally form plateaus of from ten to a hundred or more acres, admirably fitted for orchards; while the sloping hill-sides (hardly ever too steep for easy cultiva-

tion) are suited to vineyards, and the valleys to the cultivation of the small fruits generally.

The original forest growth on the hills is the magnificent long-leaved pine of the South—the glory of the semi-tropical forest—which gives every where its peculiar character to the landscape. Where this growth has been partially removed by the lumbermen, which is very generally the case along the line of the railroad, there has sprung up an undergrowth of oaks of various species, but generally of a dwarfish habit, which contrasts strongly, both in size, and in color of their foliage, with the dark gigantic pines which overshadows them.

Water-oak, hickory-oak, poplar, sweet-gum, black gum and other deciduous trees, intermixed with swamp-pines, abound in the valleys and bottom lands.

Here, also, the wild fruits of the climate are found in abundance, and of the most tempting quality. Prominent among these are Chickasaw plums; persimmons; papaws (richer and more delicious than bananas;) grapes; mulberries; blackberries; whortleberries, &c. Game is plenty in the woods, and fish in the streams. The sportsman will find no difficulty here in bagging partridges, doves, ducks, squirrels, hares and "possums," to perfect content. There are also many wild turkeys and a few deer.

The climate may not suit every one, but to me it seems unsurpassed. It is mild, and less subject to extremes of temperature, than at the North or West. Of its perfect healthfulness there can be no doubt. In summer the temperature is, of course, pretty high during the day, but on these breezy hills it is never oppressive, and the nights are almost invariably cool. The fall and winter here are absolutely delightful—a perpetual "Indian Summer," in which the air, tempered into mild deliciousness, seems ever freighted with a health-growing balm.

This region abounds in springs and running streams of the purest and softest water, and is least subject to drouth than many other portions of the country. The adaptation of the Pine Hill region to fruit culture has been demonstrated by experiment. It is here that Mr. L. E. Berckmans, the distinguished Belgian pomologist, after having been engaged in the propagation of fruit trees, and the cultivation of fruits for a half century, first in Europe, and afterwards in New Jersey, finally selected a location for his future operations; but to Mr. D. Redmond, the well known editor and publisher, for many years, of the *Southern Cultivator*, more than to any other man, is the country indebted for calling attention to this branch of agricultural industry,

as a source of prosperity and wealth for the South, and showing with what marked success it can be prosecuted here. And so well is Mr. Redmond convinced, after an experience of nearly twenty years, of the superior advantages of this region, that he is preparing to plant five or six hundred acres with trees and vines.

The finest orchard I have ever seen, either North or South, is that of Mr. Stanton, a northern man, now settled in the neighborhood of which I have been speaking. It consists of peach, apple, and pear trees, all in the most perfect condition, and in full bearing.

Nearly all the fruits of the temperate zone may be successfully cultivated in Middle Georgia. The cherry, the currant, and gooseberry are, perhaps, partial exceptions. Peaches, strawberries, and grapes, attain there a degree of sweetness, and exquisiteness of flavor, utterly unknown in colder climates. The strawberry commences to ripen about the first of April, and may, by proper management, be kept in bearing for four or five months. Sometimes it even ripens a crop in mid-winter. The peach tree comes into full bearing, in this climate, the third year from the bud, and I even saw trees in the nursery rows, only two years from the bud, with peaches on them.

Properly packed peaches are readily sent to New York; the earlier sorts reaching the market from the twentieth to the twenty-fifth of June, and commanding fabulous prices—say from \$20 to \$25 per bushel.

Apples and pears will prove even more profitable than peaches; but they have, as yet, been less extensively cultivated. Grape culture and wine making have proved immensely profitable here; the wine produced being superior to that made anywhere else in the United States.

The fig, that exquisite luxury of the South, so luscious and so nutritious, grows here freely in the open air, *producing from two to three crops a year*, and never failing. Sitting under ones own vine and fig tree is no mere figure of speech among the Pine Hills of Georgia; and thank God! now that the war is over there "are none to molest or make us afraid."

I hardly dare to state how cheaply land may be bought in this region, lest I thereby throw a doubt upon the preceding statement; but, strange as it may seem, these admirable fruit-lands, within fifteen miles of the flourishing city of Augusta, and in the immediate neighborhood of the Georgia Railroad, are now offered at from \$10 to \$12 per acre, and further from the road for even less. It is quite certain, however, that they will not long remain at these low figures.

I purpose to settle among the PINE HILLS of GEORGIA next fall. There will be room for a few more industrious and sensible people, who are disposed to mind their own business, manifest a conciliatory spirit, and show a decent respect for the feelings and opinions of their neighbors. Who will go with me? D. H. JACQUES,

389 Broadway, New York.

Top Dressing.

By various methods, through different seasons, I have learned that masses of rich nitrogenous manures are annually lost, or nearly lost, by being buried below plant roots, instead of being applied to the surface in either liquid or solid form. Whoever seeks to copy nature will learn, by observing her operations closely, that she never enriches her products with crude masses of concentrated substances; but gives her stimulants in minute proportions, chiefly from the surface of the earth. It has been urged against top dressing, that the decaying manure gives a large portion of its ammonia to the atmosphere. It is undoubtedly a fact that some ammonia does thus pass off; yet accurate experiments have established another fact, viz: that the absorption by the manure of moisture and its ammonia, more than compensates for the amount thrown off.

Where manure lies exposed on the surface, decomposition takes place slowly, and the solubles, potash, lime, soda and the phosphates are not volatile, but remain to be appropriated by the plants as required.

The slave of Bacchus, who used his stimulants, claims "that he is warmed in winter, and cooled in summer." This is exactly what mulching and top dressing do to the soil. Darkness, moisture and air, are the requisites for vegetable and mineral decomposition. These requirements are met by surface manuring, and the chemical constituents, when set free, at once become food for vegetable life. As the manure disappears from the surface, it is washed into the soil in the precise condition required by the growing plants, which in turn become active agents in carrying forward chemical changes through the entire surface on which they act.

Waste no manure by burying it in the soil. Top-dress in July and August, and make the fierce rays of the summer sun a chemical laboratory to enrich your fields. Top-dress in September and October, and make the autumn rains distil upon your lands showers of ammonia. Top-dress in the spring, and make the harbinger of plenty to distribute over your fields the wealth accumulated by the frosts and snows of winter.—*Rural American.*

Fruit Department.

The Concord Grape.

We are indebted to the *Horticulturist* for the following notes on grape culture, and its results in Massachusetts. It should encourage very much the growing disposition to enter more largely on this branch of culture in the Southern States, where the climate is so much more genial, and the quality of the fruit so much superior. The Concord grape is a vigorous grower and abundant bearer, though inferior in quality to some others. We are told, however, by those acquainted with it in the more Northern States, that it improves greatly in quality as it comes South. No other grape can be so safely planted on a large scale as the Concord.—ED. FARMER.

The *Massachusetts Ploughman*, is publishing a series of short, practical papers on the open air cultivation of the grape, written by the Hon. E. W. Bull, of Concord, Mass., the originator of the Concord Grape, and a cultivator of the vine, whose experience and success have given him a very honorable position among the horticulturists of this country.

The solid basis of fact and experience on which Mr. Bull's papers are founded, and the general soundness of his views, make me think that a brief resume of these Essays, with such criticisms as may not seem impertinent or presumptuous, will be acceptable to the numerous readers of the *Horticulturist*, and I therefore ask leave to present a sketch of the learned Vigneron's remarks, with a word of comment of my own.

In his first paper, Mr. Bull discusses the question whether grape growing is profitable or not, and answers it in the affirmative. He says, "the Concord is the only grape I cultivate on a large scale, and that for sixteen years has not failed to give me a remunerating crop.

One acre of well established, healthy vines, will give about seven tons of grapes, worth at wholesale, on the average of the last four years, fourteen cents per pound, or about 2,000 dollars. This amount, large as it is, has been exceeded in many cases; but if you reduce the result one-half, you still have one of the most profitable crops known to our husbandry." (I may say, in parenthesis, that two of the largest grape-growers in this State tell me that they make \$1,200 per acre per annum with the Concord.)

At present, and indeed for a long time to come, the market price of the fruit will be so high as to prevent the making of wine to a very great extent; but whenever the crop of fruit becomes so abundant that the price declines, wine will be

made in large quantities, and its manufacture will be found more profitable than selling the fruit.

No other farm crop requires so little of the farmers ready capital, manure, as the grape.

I have vines which give me annual crops of one hundred and twenty pounds each, and which have had no manure for ten years. I have no occasion to give the Concord any manures except a dressing, once in three years, of twenty bushels of bone dust, twenty bushels of unbleached wood ashes, and five bushels of plaster of Paris to the acre, spread broadcast and harrowed in."

I believe that we are gradually reaching a more rational view of the wants and requirements of the grape, and that Mr. Bull is right in what he says about manures. For vines that are to bring money into the owner's pocket, the days of deep trenching and high manuring are past and gone. Certain kinds of grapes, as the Iona and the Delaware, need a rich soil, and the highest possible cultivation, and this is a great pity, for if the Iona had the freedom of growth and vigor of the Concord, we should not have much further to go to find the perfect grape.

A vine that requires constant attention and petting, and a considerable annual outlay for manure, can hardly be cultivated for profit on a large scale.

I have seen the vines of which Mr. Bull speaks, in full bearing, and can testify to their splendid appearance, vigor, and capacity to produce loads of fruit. They had had no manure for ten years, but their owner proposed to give them a slight dressing of ashes the present season.

Mr. Bull advises planting vines in rows running north and south; the rows being ten feet apart, and the vines six feet apart in the row. This gives sixty square feet to a vine, and facilitates working with a horse and cart in the vineyard.

The following is the estimate of the cost of planting an acre:—

726 vines at \$25 per 100.....	\$181 50
40 loads compost.....	40 00
Ploughing.....	6 00
Carting and cross-ploughing.....	3 00
726 poles at 1 cent.....	7 26
Planting, two men, ten days.....	30 00
	\$267 76

There will be a difference in the cost in various localities, but the above is a fair average. Mr. Bull, we presume, plants two year old vines, judging from the price he gives, for first class one year old Concord can be bought for ninety dollars per thousand.

The forty loads of light compost is to promote the formation of roots the first year, and the application of the compost is not to be repeated.

Mr. Bull's second paper is devoted to the operation of planting, and we quote the substance of it, condensing a little here and there for the sake of brevity:

"Having prepared the ground for planting, open a furrow on each side of the line on which the grapes are to be placed, and two feet from it, turning the earth towards the middle of the bed and ridging it slightly.

Let one man bestride this ridge at the end of the line, and throw out the soil to the depth of six inches, over a space four feet square, *i. e.*, let him form a bed for the vine four feet on each side, and six inches below the level of the field. A second man having placed the vine in the centre of this table, and spread the roots out; the first man, still bestriding the ridge, must step backwards and throw out from between his feet soil enough to cover the roots to the depth of six inches, thus planting one vine, and making a bed or table for the second. The earth for covering the last vine in the row is taken from the end of the second row, that from the last in the second, from the third, and so on, and two men can thus plant with ease and rapidity. If the soil is wet and strong the vines should be planted four inches deep instead of six, this being the distance from the surface the roots are usually found when they have the power of selecting for themselves. Never shorten the roots of a grape vine. You may cut the top in within two eyes of the level of the ground, but by all means save all the roots."

To recapitulate, we may say that in these two papers, Mr. Bull recommends a light, warm, friable soil, not too rich; advocates the use of mineral manures only, and these in small quantities; advises us to give each vine sixty square feet of room; to plant shallow, without shortening the roots, and, though this we should have put first, he insists that grape growing is profitable.

Grapes.

William Saunders says (and no man knows better) he holds two undeniable facts in grape culture: 1st, that the best fruit is produced on the strongest and best ripened shoots, and 2d, that the shoots produced from spurs never mature so thoroughly as those produced from terminal buds. Farther, that properly ripened fruit will never be produced from unripened wood. Fruit apparently well colored may be seen on green growths, but such fruit does not possess the characteristics of a well-ripened bunch of grapes.

Keeping Grapes.

Mr. Griffith gathered his grapes early. Put them, boxed up, in a dry room of temperature just above freezing. They came out well in the spring—the Diana best; the Delaware second. H. G. Warner had been highly successful in keeping grapes. Put up a large quantity last fall in boxes of varying sizes and found the last lot fresh in the cellar that morning. Had Catawbas, Isabellas, Rebeccas and Dianas. They all kept well. Management is all. Grapes should be ripe when picked and kept clean, dry and cold. Had a cellar under a portion of his barn, in which were placed the boxes, containing 5, 12 and 24 pounds. There should not be enough in one box to make weight sufficient to crush or press hard upon the lower strata of grapes. Pack in lightly and set them one upon the other, as they will thus occupy less room. The temperature of the cellar was about 28 degrees. A temperature that will freeze potatoes, uncovered, will not freeze grapes in boxes. Pine boxes should not be used, as they flavor the grape with their own aroma. Some few of the grapes decayed, but nearly all were preserved fresh and good. The Isabellas and Concord were among the last used, and they were fresh and palatable. No other covering but the boxes were used. Mr. Babcock, Lockport, kept his grapes well till May. They were boxed up with sawdust and shavings intermixed and put into a cool cellar. The stems were as green as when put up in the fall.

Soil.—Mr. Smith did not consider a rich soil essential. Downing thought a rich soil would produce a large grape, ripening later and not so good to eat. Farley thought a moderately rich soil would ripen the fruit earlier and of better quality. Moody found a clay soil produced earlier and better grapes than light soils. Hoag said grapes in rich parts of his vineyards were a week later than upon the poorer parts, with exception of the Delaware. Griffith would prefer dry, hard, forbidding soil—"white bean soil"—to richer land. Twenty years ago planted a vineyard upon corn ground, and had raised crops every year from the third except one—last year three tons of Catawbas to the acre.

Mildew.—Herndon had visited the experimental grounds at Washington and found Mr. Saunders preventing mildew by a roof two feet wide over the trellises. Moody recommended sowing leached ashes broadcast. Longworthy did not agree with him—thought sulphur better. Several thought if planted further apart there would then be less trouble from mildew.—*Fruit Growers' Society, Western New York.*

Propagating Grape Vines.

From an experience of more than twenty years, during which time I have grown some millions of grape vines, one hundred thousand of which I have fruited in my own vineyards, I am fully able to demonstrate that a well-grown one-year-old vine, produced from a single bud, in *open culture*, (open ground,) is the best and most valuable plant that can be grown.—Wm. GRIFFITH, North East, Pa.

We have received from Wm. Griffith, Esq., of North East, Penn., samples of six varieties of native vines, viz: Concord, Hartford Prolific, Diana, Delaware, Isabella, and Catawba, all grown from single eyes in the open ground. By some peculiar mode of his own, (which we hope he will divulge for the benefit of grape growers) Mr Griffith is able to produce strong, well-rooted vines of the Delaware from single eyes, planted at once in the open ground. We can commend the quality of the vines, which are planted in our own garden, and are making a most vigorous growth.—*Horticulturist*.

Packing Fruit.

The boxes used in packing grapes for shipping, are of different sizes, holding from five to twenty-five pounds. They are sold according to their capacity, usually at one cent a pound, a five-pound box costing five cents, and so on for larger sizes. Establishments for their manufacture are found in all of the principal grape regions. In packing, the top is first nailed on, and a sheet of thin, white paper put in; whole bunches of grapes are first put in, being packed as closely as possible without jamming them. The vacant places left, after putting in as many whole bunches as the box will contain, are filled with parts of bunches, and lastly with single grapes, so that all the space is occupied. Another sheet of paper is now laid on and the bottom nailed down. By this means, when the boxes are opened, only entire bunches are found at the top.

Apple Tree Borer.

A correspondent of the *Rural World* thus writes about the apple tree borer:

"Take one pint of tar, one pint of soft soap, and half a pound of flour of sulphur—melt them together, and while it is warm paint it on the tree five or six inches up. The borer will not attack that tree the same year. Put it on in April or beginning of May every year. Wood ashes are good, and coal ashes are much better—placed around the tree to keep them off, the rain

will splash the coal ashes up the tree three or four inches. The sulphur in the ashes is what keeps them off I think—no insect will go about sulphur. The first receipt is the surest. It will also keep off rabbits, if painted up two feet high. I have used it for twenty years, and have now an old orchard that is quite free from the apple borer."

How to Make Wine.

Not according to this receipt or that. It seems as though there were a thousand ways to make wine. This is all wrong. Such multiplicity only perplexes. The simplest thing in the world is to make wine: or, rather, wine is not made—it makes itself. Simply express juice, and let stand. That makes wine: that is the whole of it.

For domestic wines, which people will drink, treatment is required. Here sugar must be added—but this is all. Were there sugar enough in the berries—currants, rhubarb, &c.—it would come under the head of grape wine. Each man may judge as to the amount of sugar he wants. Some people like sweeter and some sourer wine. Make to suit taste, and the sugar is your criterion. For wild, sour grapes, a pound of sugar to a quart of juice is the rule. Some have a quarter or even a third less. The more sugar, the sweeter will be your "wine." All wines are alike in one respect—in the general wine taste. The difference is made by the flavor of the fruit. Thus the strawberry wine is different from the blackberry wine, and these different from the grape. The reason why the grape is best (to a cultivated taste), is, that its sugar is better—differing from cane sugar. A fruit *should* have its own sugar. But the grape flavor also is excellent. Flavor and sugar unite in the grape; and hence it makes the best wine—so good that it is called the only wine.

But a man can help to make wine—help just as he does in anything—that is, he can see that only pure, ripe grapes are used, that vessels are clean; in a word, that everything is done in a workmanlike way. This will improve the article just as any article is improved by care in the production. Give, then, the grapes a chance to ripen *thoroughly* their fruit, and a good chance for fermentation in clean vessels. If the temperature is low (in the long stage of fermentation), the wine will be the better—but it will take the longer to make it. In Europe, casks are sunk 60 feet into the earth. That gives uniformity, as well as a low temperature.—F. G., in *The Rural World*.

A Plea for the Toads.

Dr. J. V. C. Smith read a most interesting and valuable paper for farmers, if they will heed its precepts, about the usefulness of toads, and an urgent plea for their protection. He made a beautiful allusion to, and illustration of the designs of Providence, in forming the complete chain of animals, all of which have their purposes and usefulness. "It is idle to talk about useless animals. All are useful, and many that we despise, are necessary to man. Even the common house flies should be ranked among the best friends of man. All dead and decaying matter, which is the most abundant in the hottest weather, is detrimental to human health and life. Swarms of flies rapidly convert this matter into living, healthy substance, and thus purify the atmosphere, and make our dwellings habitable. These every busy workers are actually essential, particularly in the dirtiest portions of our cities. They destroy immense quantities of pestilence-breeding impurities. Their busy motions pertain to life. With death comes foul odors, which flies consume and convert to life and motion. They are the real sanitary inspectors of our dwellings, and abaters of nuisance. They are under estimated, and so are all reptiles. The despised toad is one of our most useful domestic animals—one of the farmer's and gardner's best friends. We should all teach lessons of useful instruction of the toad, and learn our children and servants never to injure them. They delight in well cultivated grounds, and live long in the same locality, occupying the same nests for many years. Their natural food is bugs and flies, which are injurious to the garden. They catch their prey with wonderful facility, by the power they have of shooting out their tongues, to the length of six or eight inches, striking with lightning quickness whatever comes within the focus of their prominent eye. If one eye is destroyed they lose the power of striking their prey. The tongue is covered with a glutinous substance, which holds every insect it strikes. Night is the toad's time to work. We have accounts of monster toads in Surinam, with mouths like a hog. All toads and frogs are insect eaters, and the numbers they destroy can hardly be over-estimated. They seem to have been predestined for the great work of destroying bugs and insects generally, and as the natural habitat of toads is with man in his cultivated grounds, they are there his most useful co-workers. If not already in the garden, man should collect and carry them there. A few toads in a vine patch, soon rid it of its worst enemies, the bugs. The young of frogs, while in the tadpole age, breath by gills,

under water. After they lose their tales, and become perfect frogs, they are air breathing animals, and not amphibious. If they dive, it is only suspended inspiration. They must come to the surface to breathe. In spite of all that Shakespeare has said to sustain the prejudice against toads, they are not poisonous, nor hateful. Our antipathy all comes from faulty education. We should teach our children not to hate, but to protect toads. We should also try to overcome the prejudice against eating frogs. They should be the cheap and plenty food of the poor, instead of, as now, the choice dainties of rich. They might as well be grown for food as chickens. Frogs would only need a fit place to live. They would need no food nor care. If the idea of cultivating frogs is thought absurd, it is not more so than the idea of sending ice to the tropics was thought to be a few years ago. It was made to pay, and a frog pond, as well as the ice pond may, and frogs should be an article of food in every market.—*From proceedings of New York Farmers' Club.*

How to Keep Milk Sweet.

Large quantities of milk are sent once a day from Orange county to New York city. Notwithstanding it is sent by railroad, a portion of the milk is thirty-six hours old when it arrives in New York and is ready for the milk carts. To keep milk sweet this length of time in warm weather is no easy matter. The management on the part of the farmers is described as follows by the *Utica Herald*:

"The milk, as soon as it comes from the cow, is strained and put in long tin pails, which are set in water, care being taken that no portion of the milk be higher than the water. These pails look like sections of stove pipe, being eight inches in diameter, and from seventeen to twenty inches long. The milk is occasionally stirred up so as to keep the cream from rising. It is deemed important that the animal heat be removed as soon as may be, at least in an hour's time after it comes from the cow. The old plan, which is yet practiced by some, is to cool the milk in the cans, but is regarded as a very unsafe way when it is designed to have the milk keep sweet for a considerable length of time. The milk stands in the pails until ready to be carted to the trains, when it is put in cans holding from fifty to sixty gallons. These cans are filled full, and the cover, which fits closely, carefully adjusted.

A Dairyman says a cow ought to be milked clean in five minutes.

On the Part which the Atmosphere and the Soil Respectively Play in the Development of Vegetation and the true Theory of Agriculture.

BY J. G. MACVICAR, D. D., MOFFAT.

Of all the objects which nature presents to us, the vegetable kingdom contains the greatest beauties; and, of all the arts, the cultivation of plants is undoubtedly the most ancient, the most generally practiced, and the most important. It is to plants, in fact, that we owe, either directly or indirectly, all the food by which our life is sustained from day to day; and the number of families which it is possible to introduce into our world depends altogether upon the extent to which plants may be grown upon its surface. An all-wise Providence has not, indeed, intrusted the existence of the human family to the practice of any one art. By fishing, hunting, and pasturing—by merely gathering the roots, the seeds, and the fruits which the earth spontaneously produces, a stock of men is preserved all independently of the art of cultivation. But the increase of this stock and the progress of civilization—the numerical, the intellectual, the moral, and the religious cultivation of man—mainly depend upon the cultivation of plants.

Yet so far behind is our knowledge in this respect, that even at the present day we are in the midst of a keen controversy as to the very first principles of agriculture. Thus, on the one hand, it is maintained that almost everything depends on the atmosphere and the mineral constituents of the soil, and consequently (since the air can scarcely be operated upon by the cultivator) that the grand secret of successful farming consists in keeping in the soil, in a state suitable for absorption by the growing crop, an adequate supply of the mineral constituents proper to that crop, as these may be discovered from its ashes. And this may be regarded as the new light, which is due chiefly to the genius of Liebig. But, on the other hand, it is also maintained that neither the air nor the ashes or plants need to be much considered by the agriculturist, but only proper tillage and the supplying of the soil with well-rotted manure, the belief being that it is upon decaying organic matter in the soil that the crop mainly feeds. And this is the view which has prescription in its favor, and is most popular with practical men.

Now, though these theories do not conflict in practice so much as might at first sight be supposed from their statement, yet they do not conflict; and a final settlement of their respective claims, if it be possible, would certainly be not

a little acceptable at once to the man of science and the cultivator.

I think that such a settlement is possible, and I proceed to attempt it.

But, in order to do this, the reader must consent to a preliminary question—he must consent, in fact, to the inquiry, *What is the place of the vegetable kingdom in the economy of nature?* That such an enlarged view of plants is necessary when our aim is to understand them fully, and especially when we wish to ascertain the best food for them, and how to apply it to the greatest advantage, follows from the very nature of the case; for food is always a part of surrounding nature, and a demand for food on the part of the plant is an appeal to surrounding nature; and that such an appeal may be successfully seconded by us, it is plain that nature, in her contact and dealings with the plant, should be well understood by us, and her aid invoked in accordance with her own laws and in her own language. Now, though much has been done and beautiful discoveries have been made in eliciting the relation which exists between the vegetable and the animal kingdoms,* yet the same success has not accompanied such inquiries as have been made into the relation between the vegetable kingdom and the inorganic world. It has been too much the custom of scientific botanists to look at plants as individual objects irrespective of their place in nature—nay, to pluck them up expressly for the purpose of study, and to preserve them at home between the folds of paper. Now, from such a mode of procedure great progress has no doubt been made in the classifying and naming of plants, but scarcely any light at all has been thrown as yet on the general features of plants, such as the cause and meaning of their forms, of their inner structure, of their composition, of their colors, of their fragrance, and but little for certain on the true economy of their cultivation. As to each and all of these particulars, it has indeed been shown that all is very good, that each organ has its uses—uses often manifold and always favorable; it has been shown that the whole is beautiful, and invites to the adoration of the Creator. And so far assuredly so well. But it has not been shown why the forms and organs of plants are what they are, and not otherwise—why they consist of the substances of which they do consist, and not of other substances—and why they must have the food that they want. Nor has it been shown why they are so highly colored and

* See *The Chemical and Physiological Balance of Organic Nature*. By MM. Dumas and Boussingault. An Essay. 12mo. Boulliere: London, 1844.

so fragrant. For all these things it has only been possible to assign as a reason, that it was the will of the Creator that they should be as they are. Now, though this be, no doubt, a sufficient reason in a theological point of view and for moral purposes, yet, in a purely intellectual point of view, it is simply equivalent to saying "God knows." But with this we ought not to rest satisfied; for the Creator, whilst He is the absolute Will, is also the Supreme Reason, and, consequently, there is a sufficient reason for everything; and in the breast of man, the Creator, as the Supreme Reason, has implanted a noble instinct, whose mission is to wrestle with nature as to the reasons of things, and whose language ever is, I will not let thee go except thou bless me with light. Such is Philosophy. It does not conflict with Theology. On the contrary, they are appointed to walk in loving sisterhood together, to pursue truth together; when they find it, to rejoice together; and when they find it not, to long for and to search for it still together, and meantime to keep its Sabbath holy.

For the discovery of the *rationale* of the vegetable kingdom, the plant must be viewed *in situ* as a part of nature—as a development in the place where it grows by natural law of a living embryo given by the Creator, and designated a seed. Nor let the reader recoil from such a point of view, as if he were going to be remitted to his studies, and required to acquaint himself with all the details of natural philosophy, chemistry, and physiology, before he can understand what a plant is, and how it is to be cultivated. No more is demanded than a general knowledge of the chemistry of the atmosphere, such as is now possessed by every inquiring person, and a comprehensive acquaintance with a single law.

And what is this single, this all-sufficient law? Let us lose no time in setting it forth. By natural philosophers it has been most generally named the *law of continuity*, that law which forbids abrupt transitions from one thing to another, and secures their passing into each other on their mutual confines more or less. By physicists and chemists it has been seized in various manifestations, and has been named now the law of *diffusion*, now the law of *osmose*, now of *capillarity*, now of *catalysis*, now of *affinity*. By physiologists it has been emphatically recognized, and under the name of *law of assimilation* it has been insisted upon in one of its most important operations. By philosophers generally it has been referred to as a certain all-embracing harmony of things—a certain strongly but darkly conceived *law of harmony*. Each student of

nature has observed it to rule in his own department, and thus has naturally named it in reference to that department; but in consequence of that unhappy isolation from each other in which the various branches of science at present exist, no one has observed that these variously-named laws are in reality but various manifestations of one and the same law; no one has unfolded it in all its comprehensiveness. But this is necessary to our understanding of the vegetable kingdom, its place in nature, and how to aggrandise it; and this, therefore, though very shortly, we must attempt here.

This law is to the effect that every individualized object, once statically constructed, tends (first) to remain true to its own type, and to hand down and perpetuate that type in every successive moment of its existence as an individual or a species, the conservative action which tends to this end extending also as far as the agency of that individual or species extends; whence (secondly) each permanent object in nature, each molecule, crystal, plant, animal, must also tend to impress its own type upon all others that lie within the sphere of its influence, to assimilate them to itself; and thus (thirdly) each must tend to bring all into keeping or generic relationship, and therefore to promote an universal harmony. Whether objects in general, or more than a few, shall succeed in thus affecting each other either deeply, or in any such degree as may be marked by the senses of an individual observer in the course of his life, or of such history of the past as we now possess, is a question of detail. It is the tendency only at once to permanency of the specific type in the individual, and to the assimilation of all to each and of each to all, and to its actual environments and conditions of existence, that our law affirms and provides for. And that such a tendency does indeed operate universally all nature proclaims aloud, inasmuch as all nature is seen to be a harmonious whole. Every object, while tending to continue true to its present self, and to echo and repeat its past in its future, tends also to mirror itself in the kindred objects around it, or to vibrate in harmony with them. A bright body illuminates the dark, a hot body warms the cold bodies around it. A polarised body polarises such as are susceptible of this mode of existence. Molecules of an eminently undecomposable nature, when introduced among others which are tending to decomposition, arrest that process. Salt preserves meat. And molecules which are themselves undergoing decomposition, when introduced among unstable molecules, assist them in decomposing. Yeast causes fermentation. Con-

duction, radiation, polarity-induction, catalysis, antiseptics, ferments, &c. &c., are all so many manifestations of one and the same law, which in all tends to the same issue, viz. to assimilate to individual objects, or to that which is fixed in them as primary data, all the others around, so far as they are assimilable or contain assimilable parts, and thus to secure a general sisterhood and harmony among all. I have lately shown* that inertia, elasticity, gravitation, polarity, and other agencies, may all be referred to this law, and are in reality merely uniform phenomena in matter resulting from its paramount operation.

But for our present purpose it will be best to illustrate it in reference to *Assimilation*, as that process is manifested in the life both of plants and animals, and as it is understood in physiology. It is quite a typical illustration of our law, and as it is that by which all growth and life are maintained in organic beings, it is of supreme importance. Now, assimilation is simply to the effect that when two dissimilar yet kindred media meet together, the one consisting of plastic material, and the other of a living organism in want of redintegration or increment, that organism, while maintaining its own type, assimilates more or less the plastic material to itself and organizes it, while the plastic material on its part assimilates more or less the organism to itself—a circumstance which, though not remarked in physiological works, is altogether needful to be kept in mind in order to a full and satisfactory conception of the phenomenon. Thus, if the plastic matter consist of cell-material in the liquid state, and the living organism be a single living cell, or a mass, or, as we may say, a battery of living cells, constituting an organism which has suffered lesion, or is not yet full-grown, then the plastic liquid in contact with the cellular concrete becomes itself cellular and concrete; new cells are developed in it; the organism grows. But the assimilative power is not all on the side of the concrete part. In the region of mutual contact and action, the cellular surface feels the presence of the plastic liquid. It is more than wetted by that liquid (though the phenomenon of wetting is a superficial assimilation)—it is rendered plastic. The new cells are not added abruptly outside the old. Along with the formation of new cells there is a solution or absorption of old ones. The new and the old are beautifully wedded together; they grow and co-exist in harmony, in unity, so long as healthy

development is the order of the day. Let it be otherwise, and not a case of health; let the concrete organism in the region of the plastic liquid lose its energy, or the plastic liquid gain more energy than is proper to it in health, and then the cellular surface, instead of growing or being redintegrated, will be dissolved away or absorbed into the liquid; instead of strength there will be weakness, instead of granulation and closing there will be abscess and ulceration. Disease is not the mere absence of health. It has positive power to extend and perpetuate itself, in so far as it is not in its own nature essentially temporary and transient. Disease cannot be met and resisted too soon, while as yet the healthy action of the system is but a little impaired by it. Hence the cause of so many deaths under acute disease; the physician is not sent for till it is too late. He is no longer master of his position.

But that by the way at present. What I have now to insist upon is this, that the instance of assimilation action which has now been given is but an illustration of a law which is absolutely universal; which, though not always obvious to the senses, either in its working or its results, yet is never wholly at rest, and holds good in reference to inorganic as well as organic nature. What but a phenomenon perfectly parallel,—and to be referred to the same law, is the growth of a crystal, for instance, in a fluid medium, whether liquid or aeriform, when that fluid is losing energy as such, either through loss of quantity (evaporating), or of heat (cooling), while yet the number of concrete particles in it remains the same, so that, considered as plastic material for the increment of a morsel of a crystal or concrete substance of some kind immersed in it, or placed in contact with it, that fluid's condition is improving? And what but a phenomenon of the very same order with crystallization is its counterpart, solution—that is, the reduction to a fluid form of any soluble or volatile substance in a fluid, whether liquid or aeriform, in which that concrete is immersed? In the former case the solid assimilates the liquid to itself; in the latter case the fluid assimilates the solid. In like manner, when a granular or crystalline nucleus or bed exists in, or is continuous with, a mechanical rock, and the granular structure is seen to be extending from that nucleus or bed, what is this but an illustration among geological phenomena of the same law, the law of assimilation? Nor is it less an illustration when crystals imbedded in a rotten rock are found to be rotten themselves. Again, when two dissimilar gases or liquids are placed in con-

* See *Proceed. Roy. Soc. Edinr.*, Sess. 1858-59, p. 146; *Proceed. Phil. Soc.*, Glasgow, 1860, p. 52, *Report Brit. Assoc.* at Aberdeen, 1859; and as a separate work, *First Lines of Science Simplified*, &c. Sutherland & Knox: Edinburgh, 1860.

tact, either immediately or with a permeable diaphragm between, and the particles of the one pass in among those of the other, as they are known to do, until they are completely diffused, and the mixture of the gases is complete, what is this but a case of assimilation where the success, mechanically considered is complete? Diffusion, osmose, capillarity, are but efforts towards assimilation. Catalysis is but the affirmation of the power of one molecule to act assimilatively on another. And what else is chemical affinity but the determination of molecules, when of essentially different types, and not immediately assimilable, to merge their differences by rushing into each other's embrace, and constituting a new chemical species. It is quite marvellous what order and simplicity present themselves in nature when we try to take as large a view of her processes as nature does herself, when we try to forget all laws which are merely empirical and have no reason in them, and to dismiss all fondlings and foundlings of our own. There is in nature, indeed, an all but infinite variety—a variety which appears in laws and ends as well as in forms and structures; but there is also an all-pervading unity; and the law of assimilation in its twofold function of at once perpetuating individualities and effecting universal harmony—the impress on creation at the very fountainhead of the two essential attributes, the immutability and the unity of Him who inhabiteth eternity and is the Author of all—the law of assimilation is the most deeply-piercing and all-pervading law of the cosmos that can be reached at present. It is, in fact, exactly an articulate expression of what all men feel when they think of Being and System.

To find the plant of the vegetable kingdom is nature, it is only necessary to consider that diffusion, osmose, capillarity, &c.—in one word, mutual penetration—does not take place between gases only, nor between liquids only, nor between solids only, nor yet between solids and liquids only, but also between aeriform and concrete media. It takes place between the air and the earth, the atmosphere and the soil, on their mutual confines. Yes; the air in contact with the earth tends to penetrate the earth, and to become assimilated to it by assuming a condensed or concrete state; while the earth in its turn, on the confines of the air, tends to rise into it, and becomes as aerial as it can. Nor can either do otherwise if the law of assimilation be as universal as it has here been maintained that it is. In obedience to this law, those earth-particles which are capable of the aeriform state must tend to rise into the air, as gas or vapour; and those

which are not volatile, yet separable from each other, must tend to effloresce in the air, and to constitute, on its confines with the earth, lace-like mineral tissues as highly diffused, as spreading and elastic, as mobile and colored—in a word, as aerial and bright as possible. I say bright as well as aerial, because the atmosphere is the realm of light and colors as well as of air.

[TO BE CONTINUED.]

Incombustible Wash.

During the hot and dry season, serious accidents sometimes occur in consequence of the highly combustible nature of the materials used for roofing. Pine shingles, after being laid a few years, often become covered with a fine, short moss, which, when dry, is almost as easily ignited as punk, and a spark falling upon the roof, soon envelopes the building in a blaze.

To make a cheap wash for the roofs of buildings, take a sufficient quantity of good stone lime, and slack it carefully in a close box, or mortar bed, to prevent the escape of steam, and after slacking, pass it through a sieve. To every *six quarts of this lime*, add *one quart of rock or Turk's Island salt*, and *one gallon of water*. The mixture should be boiled and skimmed clean. To every five gallons of this, add, by slow degrees, *three-fourths of a pound of potash*, and *four quarts of fine sand*.

Coloring matter may be added. Apply it with a common paint brush. A writer, in speaking of this wash, observes: "It looks better than paint, and is as durable as slate. It will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling on it. When applied to brick work, it renders the bricks utterly impervious to rain or wet, and endures a longer time than any paint I ever used. The expense is a mere trifle; in fact, scarcely deserving of mention."

The walls of out-buildings are frequently coated with this wash, as well as the roofs, and are thereby rendered much more durable. It is said that clapboards put on without planing, if coated with this cement or wash, last much longer than when planed and painted.

SCAB IN SHEEP.—Take one pound of mercurial ointment and three pounds fresh lard, well mixed together. Turn the sheep upon its back and anoint the bare spot under each leg, and also around each place where the scab has appeared. Keep the subject from the weather a few days.

Poultry.

One hundred fowls are as many as should be quartered upon a single acre. As high as one hundred and fifty have been kept, but for success in breeding and producing eggs, at least one square rod of ground should be allowed each fowl, and more than this would be better.

In breeding fowls, great care should be taken to produce not only large males, especially if breeding for market is to be followed. If the production of eggs is desired, great care should be taken to hatch no eggs from which to raise breeders, except those of good layers. By following this course a flock of hens may be produced which will lay a large per cent. more eggs than if chickens are hatched from unselected eggs, without care, thought or design.

Who that has had the care of a flock of any kind, but has observed the superiority of some of its number over others in egg producing. While many have noticed the fact, few have profited by the hint.

It has been practiced so long to secure a large, fine specimen of a male in fowl breeding, while any female was deemed "good enough," that we have frequently seen flocks of young poultry in which the males exceeded the females in size by at least fifty per cent. This need not and should not be. The same care should be taken in producing fowls as other farm stock, and the same general law governs its production.

Value of Poultry.—Few matters pay better than poultry around a farm. Where success is so easy, failure indicates great negligence. Begin with the spring if you have been careless hitherto, and your attention will be well repaid before the autumn arrives. Aside from the convenience and profit of having always abundant supplies of poultry and eggs, attention to the various kinds (turkies, ducks, geese and chickens) will pleasantly occupy a share of the time of the younger members of the household. The gift of some of them to the children will have a good effect in stimulating attention to the whole brood.

Poultry in England is a long way behind France, the dampness of the climate being unfavorable to fowls. The English poultry yards are supposed to yield but about 4,000,000 of dollars annually, while the produce of eggs in France is said to be twenty millions dollars, and of fowls as much more. A large portion of the population of the south of France subsist chiefly upon poultry, so far as meat is concerned.

Chanticleer.—The noble and ancient chanticleer, whose clarion notes have been the world's timepiece ever since Peter denied his master, and

have never failed to sound the approach of every rising sun, the bird that saved old Rome from conflagration by his warning voice in the dead of night—shall these lose their old and established rank and give place in man's affections to breeds of swine and sturdy bulls of Bashan? What are all their uncouth grunts and frightful bellowings about the farmers' dwellings, compared with all the music of the cheerful cackling and crowing with which the poultry yard resounds from day to day? If there is not music, there is life in it.

How to Improve Common Fowls.—To improve the form, size and laying properties of the common barn-door fowls, put with the hens a Dorking or Brahma cock; then if the produce should be too leggy, introduce a large-bodied Creeper cock, as it is found, by experience, that the influence of the male is greater than that of the female. By this means you can improve your stock of fowls; and to keep them so, select the best pullets, and change the cocks every year or two, using no other variety than those enumerated above. This method has been tried and proved satisfactory.

To have the poultry yard profitable, the fowls should not be kept until they are old. There is no objection to preserving a favorite cock, as long as he is active and lively; but hens after three years will not produce as many eggs as those of one or two years. Much, however, is depending on the breed kept, so far as good layers are concerned.

If you wish your hens to do well, and lay well, keep them in a moderately warm, well lighted, well ventilated and strictly clean place. Feed them all they will eat of boiled potatoes, mashed and mixed with shorts and midlings in the morning, and on corn, oats or barley at night. They are fond of buckwheat, some fresh meat or chandler's scraps, with sulphur mixed with meal. If you don't wish to find now and then a dead hen, don't have the roosts for the large hens more than three feet from the ground, and then two ladders for them to go up and down on. In this way, if they have plenty of broken bones and pounded oyster shells, old lime, water, plenty of gravel, and dust and ashes to roll and bathe in, they will pay.

Poultry, it is thought, ought always to be confined; but if so, instead of a dark, close diminutive shed or hovel, have a spacious, airy, light place, constructed especially for them. In both large and small establishments it will be necessary to separate some fowls from the rest, when particular breeds are to be raised; separate pens or wards must be provided, either at some

distance from each other, which is preferred, or with divisions to prevent any intrusion, by which crossing might be prevented.—*English Paper.*

How we Manage our Poultry in Summer.

It is not always best to allow hens to run over the garden, and it is always best to allow them some recreation outside of the park in summer. While I am waiting for my breakfast, before going to my place of business, I open my park and allow the hens to race around in the grass, which is quite a luxury for them, I at the same time keeping a little watch to see that they do not get into mischief. I allow them this privilege until my breakfast is ready. I then start them to the park, and close the door until the next day. It requires but a short time to train a flock so you can take them out and in the park at pleasure, without any trouble. When I have two or more breeds at a time, I drive them back and make them secure before letting the other out. I find that my hens do about as well, when treated in this manner, as when allowed the privilege of running at large all the time; and all the attention it takes away from other pursuits is but trifling—and I find that I'm better off with a little recreation of this kind myself, than to sit and read newspapers or lie in bed whilst my breakfast is being got ready. The above is done before giving them their morning feed, especially before they become thoroughly trained, as they return with less reluctance, and they eat more freely of grass, which is excellent for them to change on when confined in a park. Hens, when confined in a park, should have some bits of fresh meat to take the place of worms and insects that they would be able to get by being out at all times. We occasionally get a beef's kidney and chop fine, both summer and winter, unless running at large. For amusement, we occasionally go into the park while the occupants are out taking their morning walk, and spade up the ground, and they forget that they are not out and running at large.

Feeding Fowls.—There is nothing gained by feeding your laying hens as though you were fattening them for the eastern market. Especially will this remark apply while they are running out. This thing of over-eating is hurtful to any thing that eats. It is natural for a fowl to be on the lookout the most of her time, and swallow a grain at a time as it is found, and thrive best living in this manner. Not so with man or beast. It is best for the latter to eat meals at

certain periods, and not eat a particle between meals.

Feed fowls a little at a time and often. Grown fowls should not be fed less than three times a day. I find if I over-feed fowls, they go off in some corner and sit down and chill, if the weather is cold; whereas, had I given them half as much, they would continue moving around, feeling well, and seemingly getting that exercise that their nature requires, by keeping their blood in healthy action. By this means my hens are better off, in every respect, one-half of my grain is saved, and as great a per centage of eggs is secured; and at present prices of grain, it is an object to know how to feed judiciously.—*Sever's New Poultry Book.*

A Year of the Cattle Plague in England—Official Statement.

The following official statement has been made by the British Privy Council:

PRIVY COUNCIL OFFICE, June 22.—The cattle plague has now completed the fifty-second week of its prevalence, and during the year nearly a quarter of a million (248,965) of attacks have been officially reported, 80,597 cattle are stated to have been killed, 124,187 to have died, 32,989 to have recovered, and in 11,192 cases the results have not been specified. In addition to the foregoing, 51,343 cattle exposed to risk have been slaughtered while free from disease.

In the aggregate, more than 50 (50.5) in every 1,000 of the ordinary stock of cattle in Great Britain have been attacked, and to every 1,000 attacks, whose results have been reported, nearly 900 (861.3) animals perished.

The epidemic has also extended to a considerable number of sheep, and since the commencement 4,463 are officially reported to have been attacked; of these 4,002 died or were killed, and and 461 recovered or were unaccounted for.

During the week ending the 16th of June, 533 attacks were reported to have occurred in Great Britain—namely, 488 in England, 26 in Wales and 18 in Scotland. The number of attacks—namely, 533—shows a decrease of 454 on the previous return. Correcting the total, by adding an average of attacks commencing during the week, but which may be subsequently reported, the number for the week will be 686.

TO CURE SCRATCHES IN HORSES.—Tell your subscribers who have horses which are troubled with scratches, to try a simple remedy, viz: Keep the fetlock clean with castile soapsuds, and then wash twice a day with buttermilk. Give them a good rubbing at each time.

Sweet Herb Culture.

BY PETER HENDERSON, JERSEY CITY.

The cultivation of sweet herbs for market purposes, is but little known in this country, except in the vegetable gardens in the vicinity of New York; there it is practiced to an extent of perhaps 60 or 70 acres, a fair average product of which would be about \$500 per acre. Like the crops celery, spinach, or horseradish, it is grown only as a second crop, that is, it is planted in July, after an early crop of peas, cabbages, beets, or onions, has been sold off. The varieties used are Thyme, Sage, Summer Savory, and Sweet Marjoram, the former two being grown in the ratio of ten acres to one of the latter. The seed is sown in April in rich mellow soil, carefully kept clean from weeds until the plants are fit to plant out, which may be done any time that the ground is ready, from the middle of June until the end of July. As the plants are usually small and delicate, it is necessary that the ground be well fined down, by harrowing and raking, before planting. The distance apart for all the varieties is about the same, namely, 12 inches between the rows, and 8 or 10 inches between the plants; the lines are marked out by what is termed a "marker," which is simply a mammoth wooden rake, with the teeth 12 inches from centres, and having 6 or 8 teeth, this number of lines is marked at once. (This "marker" is used for many other purposes; in the lining out the rows of early cabbage, for instance, every alternate line is planted, thus leaving them 2 feet apart, their proper distance.) In 8 or 10 days after the herb crop has been planted, the ground is "hoed" lightly over by a steel rake, which disturbs the surface sufficiently to destroy the crop of weeds that are just beginning to germinate; it is done in one-third of the time that it could be done by a hoe, and answers the purpose quite as well, as deep hoeing at this early stage of planting is perfectly useless. In 10 or 12 days more, the same operation is repeated with the steel rake, which usually effectually destroys all weeds the seeds of which are near enough to the surface to germinate. We use the steel rake in lieu of a hoe on all our crops immediately after planting, for, as before said, deep hoeing on plants of any kind *when newly planted*, is quite unnecessary, and by the steady application of the rake, weeds are easily kept down, and it is a great economy of labor *never to allow them to get established*. The herb crop usually covers the ground completely by the middle of September. Then, every alternate line is cut out, each plant making about 2 "bunches."

The object in cutting out the lines alternately is, to give room for the remaining lines to grow; in this way nearly double the weight of crop is taken off the ground than if every line had been cut, and it frequently happens, on particularly rich soils, that at a second cutting every alternate line is again taken, when the remaining lines now standing four feet apart will again meet. I had about an acre of Thyme treated by this process, in the fall of 1864, that sold for over \$2000; but this was an exceptional case, the crop was unusually fine, and prices at that time were nearly double the usual. As before stated, the average yield is about \$500 per acre. Herbs are always a safe crop for the market gardener; they are less perishable than anything else grown, as if there be any interruption to their sale in a green state, they can be dried and boxed up and sold in the dry state, months after, if necessary. The usual price is from \$10 to \$15 per 1000 bunches, and we always prefer to dry them rather than sell lower than \$10 per 1000, experience telling us that the market will usually so regulate itself as to handsomely pay for holding back the sale.—The cost of getting the crop raised and marketed will average about \$150 per acre, the principle expense being in tying it in bunches. But with many of our industrious German gardeners it does not cost half that, as tying up is usually done by their wives or children in the evenings; a pleasant as well as profitable occupation.—*Am. Agriculturist*.

Cure for Heavey Horses.

Having had a large experience with animals afflicted with the disease in question, always with success, with a small amount of labor, I submit the following: First, procure (if you have not one already) a head halter, and tie the horse so that he cannot eat the bedding; give for a few days but little food, and that wet, not more than half the usual quantity, which will relieve the breathing; after which, nutritious food is fed liberally with grain, and less hay, and so long as you do so, your horses will not have the heaves.

If the owner wishes to hurry recovery, a dose of physic (an ounce of powdered aloes) will unload the bowels quickly.

I have owned several heavey horses, and after treating them as stated above, I have doubted whether they ever had the disease, but after (by accident) a large amount of hay had been devoured, the distressed breathing and double action of the flanks reasserted the facts.—*Corres. Mass. Plowman*.

The American Farmer.

Baltimore, September 1, 1866.

TERMS OF THE AMERICAN FARMER.

SUBSCRIPTION TWO DOLLARS PER ANNUM.

RATES OF ADVERTISING:

Eight lines of small type constitute a square.

	1 Mo.	3 Mo.	6 Mo.	1 Year.
One Square.....	\$2.00	\$5.00	\$10.00	\$15.00
Half Page.....	15.00	35.00	60.00	110.00
One Page.....	25.00	60.00	110.00	200.00

PUBLISHED BY
WORTHINGTON & LEWIS.
 Office, 52 S. Gay street,
 Near Exchange Place.
 BALTIMORE.

What Our Lands are Worth.

The real value of Maryland and Virginia lands is not yet known, and present prices do not pay for them, except so far as the sale of a part serves to enhance the value of the remainder, by developing its intrinsic worth. We would not have these lands held so high as to discourage settlers, but their owners should consider well their real worth, that they may be prepared to advertise it well to buyers, and that they may be encouraged to hold on, so far as they may be able to do so, for that appreciation which, sooner or later, must come. They may sell "alternate sections," but they should reserve the remainder, and reap the benefit of the increase in value which will inevitably follow the influx of an industrious people, with means sufficient to cultivate well the surplus land now owned in Maryland, Virginia, and other Southern States; they should, as we have before urged, keep their old Homes, and so keep themselves in position to form, to direct, and to give expression to public sentiment. This is the highest duty now, of the land holders of the old slave-holding States.

As to our advantage, in point of climate, over more northern States, one of the best known agricultural writers of the day, himself a Northern man, in a letter written from Washington to a Northern agricultural journal, expresses the deliberate conviction, that agricultural labour in the latitude of Washington will produce as much in four days, as in six days in Western New York. We see no reason to question this opinion, nor has it been questioned, so far as we know. If it be admitted, it makes a difference in value of

fifty per cent. in Maryland lands, over those of the same quality in one of the finest regions of the country. The same degree of fertility that would make an acre worth a hundred dollars in Western New York, would bring it up to a hundred and fifty here, and for the ordinary products of the soil.

But this same difference of climate makes ours, and more Southern latitudes, superior to more Northern regions for the growing of some of the most valuable fruits. It will soon be understood that both the soil and climate of Maryland are well suited to the grape and pear, as it has already been found to be to the strawberry, the peach, the melon, and the apple. This is the opinion of those whose experience elsewhere and here, make them eminently capable of judging. The grape especially, the most valuable of all, we anticipate great success for; the quality of the same sorts being better, and our milder autumns allowing a thorough ripening of the new wood, a point of much importance. In a recent publication, the originator of the Concord grape makes the value of an acre's growth of this grape, in his own hands, and with good culture, \$2,000. But the Concord in Maryland, while it maintains its hardiness and productiveness, is, in quality, far superior to that of Massachusetts. Other sorts, as the Delaware and Iona, much superior to the Concord in quality, may be found, on due trial in our temperate climate, to increase greatly in productiveness. In the midst of great, growing markets, it is not difficult to foresee the greatly increased value that our lands will have, under a systematic and spirited effort to introduce fruit growing into the State as a branch of general culture.

But estimating our lands for ordinary farming purposes, they are held far below their intrinsic value, and this value is by no means duly estimated by those who would buy. The remark above alluded to, as to climate, puts their value up fifty per cent., but it was met by another, intimating their inferiority in point of actual or possible fertility. The same writer, in another communication from Washington, says, that having travelled recently through the best portions of the States of Tennessee, Illinois and Ohio, he had seen no field of clover equal to one he had visited on the Potomac, below Washington, that had not been manured in fifty years. The fertility of this field had been maintained through a course of cropping, by shells found on the land, and clover grown by means of the shells. This was no rare case. We know, though strangers do not know, how many thousands of acres in Maryland and Virginia have been fertil-

ized by the same cheap means; and our people themselves do not yet know how many other thousands of acres might in the same manner be enriched.

The Eastern Peninsula of Maryland has material enough of marl and shells, and marsh and sea ore, to make every acre of its poor land as rich as the best, and the best Eastern Shore lands have produced the heaviest crop of wheat on record, this side of California. A crop of wheat reported in the "American Farmer" by the late M. T. Goldsborough, of Talbot county, was on nine acres of a large field, sixty-four bushels to the acre, and on a larger portion of the same field, fifty-five bushels to the acre.

The whole tide water region of Maryland and Virginia enjoys the same resources, and away from tide water, the still cheaper means of clover and plaster; and inexhaustible supplies of limestone. With such means of improvement, and their well known facilities for reaching the best markets, their natural fertility of soil and genial climate, what reason is there, but our own want of appreciation of what belongs to us, and our consequent apathy in bringing the true value of our possessions to the notice of others, that keeps down the price of Maryland and Virginia lands. We had better almost give away our surplus lands, than have them lie waste or unimproving, but if our people had some of the Yankee enterprise which has been so often exhibited in the sale of wild western lands, they would soon find the means of bringing in a population which would buy from them at better prices, while they would have the satisfaction of knowing that they rendered a fair equivalent.

Strawberries.

One fact seems well established by the experience of Strawberry growers, which is, that the value of varieties changes continually, with change of place, and that the reputation which a berry may have for valuable qualities elsewhere, gives us no assurance of its value when we bring it into our own grounds. Hence the many disappointments we experience in getting much lauded kinds. They may be very honestly advertised, but unsuited to the new locality. Hence it is advisable to try a few of the different varieties, and plant largely only such as are found by experience to flourish well in your own locality. G. Howatt, of Tarrytown, N. Y., says in the *Gardeners' Monthly*: Thirteen years ago, I moved to Pittsburg to lay out and plant a company place. Hovey's seedling was the universal strawberry here. Market and private gardeners told me

there was no use trying it there, it would be a failure. I could not see the philosophy of that. I purchased eight hundred dollars' worth of plants; had my ground all prepared in the best possible order for their reception. Plants grew as fine as I ever saw plants grow, and I anticipated what a fine paying crop I should have the following season, they receiving the very highest cultivation during the summer. Fall and following spring they flowered, but no fruit. I do not think there were half a dozen fruit on the whole lot. I would not remove, but tried them another season with the same result. I imported a quantity of British Queen from England, and the result was the same as the Hovey seedling." He found, however, that the Bicton Pine succeeded finely, and going shortly to take charge of a place in New Jersey, had a few thousand of the Bicton Pine sent, intending to grow it largely, but failed as completely in growing it in New Jersey, as he did the Hovey seedling at Pittsburg. He says further, that Wilson's seedling and Triomphe de Gand do not succeed in Northern New Jersey, Russell's seedling and La Constant, being ten to one more prolific.

Mr. John Saul, of Washington, says, also, in the *Gardeners' Monthly*, "I was struck with the very just remark made on strawberries in the June No. How few, very few, of these varieties are of any value."

The Agricultural College.

A meeting of the Board of Trustees of the Maryland Agricultural College was held on the first day of August, at the rooms of the State Superintendent of Instruction. There were present James T. Earle, Esq., President, Rev. Dr. Pinkney, Otho H. Williams, Ramsay McHenry, Edward Lloyd, and Charles B. Calvert, Esqs., representing the stockholders, and Rev. L. Van Bokkelen representing the State.

No definite action was taken, we learn, as to reorganization or other matters of importance, but the whole subject, including the report of a previous committee, was referred to Mr. Earle, Rev. Dr. Pinkney, and Charles B. Calvert, as a committee, with directions to take at once the necessary steps for the re-opening of the College. It was the unanimous sense of the meeting, we understand, that the re-opening should not be postponed beyond the 1st of October. A meeting of the Board has been called to consider the action of the Committee, and we cannot doubt that it will result in re-opening on the day named, if not earlier.

Clover Culture.

If there is one thought which we would press more than another, on landholders in the Middle and Southern States, it is the necessity of extending the cultivation of Clover. While the most remarkable and most valuable results have been realised in its use as a renovator, there is still an immense field for its invaluable services. We would urge upon our readers by every consideration, that they will not be satisfied that clover will not grow well upon their lands until they have given it the most thorough trial. A Marylander who was familiar with its value as an improver here, having settled in Georgia, says: "I mean to sow the seed every month in the year, till I find out the right time." This is the determination which should influence every landholder. Whatever the obstacle, whether of climate or soil, let no effort be untried to overcome it.

We know that to a great many of our readers it is very unnecessary to say anything of the value of clover culture, and they will hardly understand the necessity of alluding to a matter so familiar to them. To sow clover seed is to them as necessary a part of their rotation as to sow wheat. Whatever other means of improvement they may use, this is never overlooked, and the loss of a crop is a calamity. Their lands have been raised gradually, through its influence, to a degree of fertility, varying in degree with the skill of the farmer, or the natural constitution of the soil, but always so marked, that he who has once seen its effects, knows he cannot afford to do without it. He understands that it is at once, food for his stock, and for his crops, and that while it feeds them directly, it exerts an influence upon the constitution of the soil which corrects permanently, the natural faults of too great closeness, or looseness, of texture.

That clover culture is not so extended as it deserves to be, is owing first to the fact that its value is not sufficiently known, and secondly, that the crop grows with such facility upon certain soils and under a favourable climate, that the difficulties occurring under unfavourable circumstances discourage attempts to produce it.

In extensive sections of Maryland, Delaware, Pennsylvania and Virginia, nothing seems needed beyond the merest sprinkling of Plaster (Sulphate of Lime) to secure the most luxuriant growth; and such a growth means nothing less than a soil sufficiently fertilized for almost any crop that is to grow upon it.

In other sections, the Plaster seems to produce no such effect, as on portions of the Eastern

Shore of Maryland, but lime from the shell banks, or marl-beds, is a ready substitute, and clover rarely fails on well limed lands, if otherwise well cultivated. In the limestone regions there is the same facility in clover growing.

In the absence of such advantages, and in hot and dry climates, or upon soils of light, open texture, the difficulty of growing clover increases, and the greater effort must be made to overcome it. In these cases the difficulty will diminish after a first success. In old countries we hear of "clover-sickness," but we have reason to think the disease is not known in America; at any rate it is a far off evil to lands that are strangers to the plant. Where it has been grown for a long time, there will be found occasion for somewhat longer intervals between crops, but on newer lands, a first crop will favour the success of a second, and long intervals between crops will be quite unnecessary.

Where there is difficulty in securing a growth of clover, we must give special care to all the conditions we can command. First the land must be fertilized. If plaster does not act with great effect, or lime is not to be secured, guano or super-phosphate must be used as for other crops. It has been a great error to use these fertilizers to so great an extent, for the direct benefit of crops which are mainly carried off the land. The clover crop first of all should be secured, and that relied upon for the general enriching of the land, and fertilizing other crops.

The condition of the soil must be looked to as to drainage, cleanliness, &c. Clover will not flourish where there is excess of moisture, or water stagnant in the soil. It is needless to undertake to grow it, except upon dry or well-drained grounds. Neither will it grow upon soil filled with undecomposed vegetable matter, or in any such condition as encourages sorrel, or other noxious weeds of natural growth. Therefore, if sown upon new lands after one year's cultivation, such weeds will overgrow it, but after two or three years cultivation in a hoed crop, the clover will flourish. There will be the same difficulty if the soil is full of the remains of weeds or crops, in an undecomposed state. One year's cultivation in a hoed crop does not put them in condition for clover.

Again, under circumstances unfavourable to the growth of clover, seed must be sown abundantly and at different times, and with different modes of treatment. When a first crop is grown, let the ground have the benefit of all the seed it will produce. The early growth, if the greatest benefit to the land is wanted, should, when in

bloom, be trodden down and consumed by stock enough to level it well in a few weeks. It should then be cleared of stock, and all the after growth be allowed to make seed. If this growth be allowed to fall on the ground, it will so charge it with seed as greatly to facilitate future crops.

Where there is difficulty from any cause, in getting a good set—and we often fail in this, even under favourable circumstances—it may be almost ensured, by a top-dressing of yard manure, or litter of any sort. It would be well worth while under ordinary circumstances to devote the greater portion of such substances to this purpose.

No one should be discouraged by difficulties, but the most strenuous efforts used, until it is absolutely certain that there are natural causes which make it vain to attempt to grow this foundation crop of good lands, and good stock.

Fruit Growing.

We have spoken to our readers of their Homes, not of beautifying them as in past times and adorning them by all the arts of the Florist and the Landscape Gardener, but of keeping themselves in possession, of assuring themselves that they shall be to them still Homes. We have advised with them as to the value of their lands, and the disposition they must make of them, in meeting the necessities of the new condition of things. We ask their attention now to new ways of using these lands,—not new absolutely, but new to them because they have wilfully, and in their blind following of old things and old ways, ignored them.

We promised in our first Number to give more attention than heretofore to the subject of fruit growing. This is the matter we now call their attention to, as one of the instruments they must use to keep themselves in position, to increase the value of their lands, and to assure themselves larger yearly products, with less labor, and from smaller areas. Many of them must sell a portion of their land, and will have less to work. Those who do not sell, must cease to labour over extended and impoverished surfaces. They cannot hire labour for such a purpose. They must rent, or graze their outfields, and get larger returns from a few acres. When very near to market they may raise bulky vegetables, but farther off, fruits that will bear transportation. We say Fruits, and we mean more especially *Grapes*. We wish we knew how to impress it more forcibly upon the attention of our readers; they must grow Fruits of any or every sort; and *Grapes* especially.

But shall everybody grow them it is asked? Certainly not. Such a thought will not enter everybody's head, because everybody is a dull, ignorant old fellow, who does not read the *American Farmer*. We are talking to our readers, and for their benefit, and compared with the great mass of Farmers, even in the State of Maryland they are the select few. The Farmers of Maryland are Thirty Thousand, and we have never claimed the fourth of them as the readers of ours, or any other Agricultural Journal.

But it is feared that the business may be overdone. The answer is, that with all the increase of many years past, the demand has kept ahead of the supply. Fruit is getting more abundant indeed, but every year harder to get; because every year higher. Notwithstanding that single growers of the Strawberry have more than a hundred acres each in cultivation near Baltimore, Strawberries, little above medium quality, brought 40 cents a quart in the market. Notwithstanding our old fields and fence corners fruitful in the blackberry, and one of the most productive seasons ever known, the Lawton blackberry brought, throughout the season, eight dollars a bushel as retailed in the market. There are thousands of acres of marsh lands in the State entirely worthless to the owners, which are very capable of yielding two hundred bushels of cranberries to the acre, worth, at all times, four to six dollars a bushel, with a demand without limit for shipment. Many of these marshes have the vines to stock them already growing wild in their midst. Pears of excellent quality, we munched freely when a boy, from standard trees of thirty, forty, and fifty years of age, ever bearing abundantly, and in Maryland soil; but who eats a pear now, except at fabulous prices, after all the modern stimulus to their cultivation. There is not now, the fourth of a decent supply of any kind of the best known good fruits, in the Baltimore market. With the growing demand for what is good, and the very large supplies needed by the preserving houses for winter use and shipment, there is the least possible danger of over production.

Now as to grapes, one great advantage they have over other fruits, is that they are almost equally profitable for table use and for wine. And they have the further advantage, that they need not be pressed immediately into market, but will keep well during several months, and can be disposed of at leisure. Failing of a remunerative demand, they can be manufactured into wine, and reserved for future sale.

The demand for wholesome wine; and genuine brandy, is without limit. With all the temper-

ance preaching in the world, men will have wine, and our opinion is, they ought to have it, if it be good, not for abuse, but for use. But it is very desirable that it be good, and not some "villainous compound." There is more champagne wine offered for sale in the New York market every year, than the whole champagne district produces. And how much brandy we have offered for sale that is genuine, may be judged from the revelations made recently in New York, at the trial of parties, at the instance of revenue officers. It appeared from the testimony that the liquor in controversy was a fluid known as "imitation brandy," and was made from cologne spirit, flavored by oil of cognac, and "neutral liquor," commonly known as French spirits. A maker of imitation brandy at Albany, tasted a sample, and declared it had not in it a drop of French brandy. Such was the general character of the testimony. A druggist, however, testified to its genuineness, because it was similar to brandy he had purchased in Boston for \$9.50 per gallon. He had been himself cheated, the price of the article in New York being \$2.50 per gallon.

Now it must be evident, that there is a wide field open for the raw material out of which to make pure and genuine wine and brandy; and when we remember the value of the latter as a medicine for delicate women and other invalids, and the true worth of a pure wine for ordinary consumption, we may form some idea of the importance of grape culture to the health of the community.

Apart from such uses, when we consider the value of the grape crop as exhibited in an article on another page, in the unpromising climate of Massachusetts, we may suppose that as a mere market fruit, with our greatly favourable circumstances of soil and climate, it is not likely to prove unprofitable. Twenty-five years ago, Downing estimated the number of acres in cultivation in the country at three thousand, now it is supposed to be a hundred thousand, and grapes are as high as then.

There is no impediment to their cultivation. It is easier, simpler, and every way pleasanter work than the cultivation of tobacco. For the cheerful work of the vintage, there will always be found sufficient help. What is needed, is enterprise, and pluck enough, to look a new idea in the face, and turn it to advantage.

COTSWOLDS.—The Cotswold buck bought by H. C. Meriam at Mr. Andrews' sale, sheared fourteen pounds. The best ewe sheared twelve pounds.

Scientific Reading.

A young correspondent, writing from Enfield, North Carolina, whose farming experience begins with this year, speaks of the interest with which he has been reading back numbers of the *Farmer* of 1858 and 1859, and of the pleasure he takes in Agricultural Chemistry, and kindred reading. Many other correspondents have either lamented the loss of back volumes with their household effects during the war, or expressed the pleasure they had taken in them in the absence of a new issue. Such frequent expressions, from very various sources, afford gratifying testimony to our success in furnishing the readers of the *Farmer*, as we always designed, not with matter of temporary interest merely, but with that which was worth keeping, and would keep without spoiling.

This is what we aim at now. Matters of mere routine—what crops were made by such an one, how he cultivated, and how he manured—how much milk a cow gives, and how she was tended and fed,—how some one has fattened his bees or his sheep—this is more popular reading, and has a certain value. We give a due proportion of it, with matters of detail as to the working of various crops, care of animals, &c. As far as we can do so, we make these matters of practice illustrate principles, and aim thus to familiarize the minds of readers, with the underlying truths, which must direct all intelligent practice.

But we should be unwilling, at this day, to edit an Agricultural Journal which was only so far scientific. We must recognize the advance of agricultural science, and we must gratify the taste which we know exists, to a greater or less extent, among our subscribers, for purely scientific reading. Therefore, we publish such articles as "Cultivation and Manure as Fertilizing Agents," by Prof. Tanner, of Birmingham, the essay of Dr. Anderson, of Edinburgh, on the "Supposed Exhaustion of Soils by the Modern System of Agriculture," and that by Dr. McVicker, of ———, in this number.

We have a further object too, in doing so. We wish to encourage all such readers as the correspondent alluded to, to raise themselves to a higher level of agricultural culture, by selecting for them, from the best sources, matter most likely to be interesting as well as valuable. Our young men can no longer afford to walk in the paths of their fathers. They must recognize the changes which are going on, and the advance in Agricultural Science, especially. If they find such articles as we publish a little hard to read at first,

let them read again and again, till they become pleasant reading. Then they will realize that they themselves have made an advance in the right direction.

Instruction in Fruit Culture.

So many responses were made to the advertisement in our August number, of an Englishman, proposing to take charge of a Fruit growing Farm, that we take this method of saying to those whose letters may not be directly answered, that the advertiser has been induced to remain in his present position. There is evidently very great demand for the services of men familiar with fruit growing, and it is a demand not likely to be supplied. We hope that very many of our young Southern men, who find it difficult to get employment, will turn their attention to this business, and take hold of it with energy; and we think our Agricultural College could do nothing more practically useful to the community, than to take a certain number of pupils for special instruction in Fruit growing in all its branches, under the skilful Head of that Department at the College. It will be for a time, one of the greatest drawbacks to Fruit culture, that there is really so little practical acquaintance with it. Young men, as they have opportunity, should get instruction, but others need not be deterred by supposed difficulties. They must consider that no art is well learned, but by taking hold, and working it out. Good instruction greatly facilitates the efforts of the learner; it is good help for him. But he, really and effectually, learns his business, only in working honestly up to the amount of knowledge he starts with. None are so ignorant, that they need be afraid to take hold, and make a beginning.

"THE LOST SUBSCRIBER."—Our friends are informed that we are amply recompensed for the gentleman who resigned his "situation" last month, as a subscriber to the *Farmer*, though we have not the least objection to all the new names they can send. The first to take his place is, we are glad to say, a Northern man, who hails from North Carolina. The friend who sends the name and the money, says, "let us know of all you lose for the same reason." They will, probably, hereafter, "die, and make no sign."

The second substitute writes from New Kent county, Va., briefly, as follows:

"My friend and neighbor, Col. T. A. L., to whom you have forwarded the July and August numbers of the *American Farmer*, has been kind enough to hand them over to me for inspection, and I am so well pleased that I feel a sympathy

with that *poor fellow* who 'bears malice,' and is determined to debar himself the rich treat of its monthly visits, for a splenetic gratification of a mythical nature.

If you think it possible to survive the *shock of a separation*, so far as to be able again to put forth another number, please accept of the enclosed two dollars, and substitute my name in place of the *lost subscriber*, who has, ere this, been expunged from your books, by a black stripe."

We must add only the following:

"As you express willingness to part company with this immaculate patriot, and ask some one to send you a subscriber in his place, I take great pleasure in sending you *two*, who can appreciate your labours in the field of Agricultural Science, without exercising a carping censorship on your past political creed. I herewith enclose four dollars."

J. T. W., Montgomery Co., Md.

The little paragraph "Bears Malice" was written pleasantly to show our entire indifference to the sort of censorship alluded to, and the request that some one would send a new subscriber to fill the vacancy, was without premeditation, and very luckily as it seems, thrown in at the close. The response shows how easily those, who really think well of the *Farmer*, might give it great help, if they felt some stimulus to do so. They have this stimulus when we say a word in unison with their just and generous sympathy for those who, whatever might be thought of the past, are now surely, only wronged and suffering friends. But may we not move their sympathies otherwise, even by the love they bear that common Mother of ours, whose lovely face has been marred, and whose fair bosom torn, by ungentle and ungrateful hands. Help the President to reconstruct unfortunate Sister States, help the *Old American Farmer* to reconstruct our gentle nursing-mother, the Earth. There is sad need of it, for her desolations are the work, as well of peace as of war, and her worst wounds, perhaps, have been "in the house of her friends." We want help, and ten thousand Maryland men should give us a hand.

AMERICAN POMOLOGICAL SOCIETY.—We learn from the Circular of President Wilder, that the meeting of this Society, which should have taken place in St. Louis in September, has, by and with the advice of the Executive Committee and other leading Pomologists, been postponed, for reasons given, till 1867, when due notice will be given for its reassembling at that place.

Fertilizers.

"No man of common sense," says Hon. Willoughby Newton, in his letter to the *Farmer* of last month, "can suppose it possible to cultivate, profitably, poor land with hired labour; and under our new system fertilizers must be used to a much greater extent than formerly."

Nothing can be truer, than that to farm profitably, under the changed circumstances which surround us, we must enrich our lands. We cannot afford to make half crops. We cannot take four barrels of corn where the same labour will give eight, or ten bushels of wheat where we may as well have thirty. We must economise labour by contracting our surface cultivation, and by enriching what we do cultivate, that it may approximate at least its maximum of production.

To do this, the portable fertilizers of the market must and will be used, even more largely than ever before. Those that are well and honestly manufactured, and good natural guanos, have an intrinsic value which cannot be overlooked, and they have the taking quality of giving us on poor lands the crops that belong to fertility, and of cheating us into the belief that our barren fields have become, by magic, rich. They will be used, therefore, more and more, and to the prudent and judicious, will be the instrument of improvement and wealth.

As nothing has been more uncertain heretofore than the character of the fertilizers offered in the market, it becomes those who are interested to look well to what they must buy. If for any reason they fail to get a good or genuine article, it is not the loss of the cost of the fertilizer only, but of the whole year's crop. Of the several articles offered in the advertising columns of the *Farmer*, we can say, with pleasure, that they have an established reputation, where they have been used for a sufficient length of time, or are offered by merchants of high standing in the Baltimore trade. Our readers must judge between them, according to the evidence presented.

MANURE FOR EVERGREENS.—The *Horticulturist* says that although it said that animal manures are injurious to evergreens, it has been recently proved that old, well-rotted barn-yard manure may be applied to them with the best possible results. Trees and shrubs manured with this compost grow vigorously, putting on a deeper, brighter green, while Kalmios and Rhododendrons flower more abundantly than in the old practice of leaf-mold manuring.

Our Correspondence.

Hon. James Chesnut, one of the Senators from South Carolina, who resigned his seat in the United States Senate at the opening of the war, writes a letter on business, from which, claiming his indulgence, we make the following extract: "At the end of the recent disastrous war, in which, under a sense of duty to my country, I bore, however humbly, still the best part I could, I find myself in controul of a very large and fertile body of land, without systematic labour, adequate to my wants, without a sufficiency of animal power, agricultural implements and seed, proper for the development of a new and moderately successful system of agriculture, which I hope to adopt for the ensuing year. My losses, I will not refer to, as I regard them as the natural result of events, and the willing offerings which I gave to a cause which I thought just, and most honourable, and cherished. This result I have accepted in good faith, and as I have now no past to which I will refer, I desire to make the brief future, for me, as beneficial as I can to myself and my country.

"I am now engaged in the production of corn, cotton, turpentine, &c., the usual staples of this region heretofore. My experience of this year, however, and observation as close as my opportunity would enable me to make, have convinced me, that with the radical change in our condition, we must, if we hope to be successful, make a corresponding change in the employment of our capital, and in the nature of productions resulting therefrom. The cost of labour now, and the tax proposed by Congress upon cotton, will make its production a luxury, or amusement, too costly to be hereafter indulged in by an impoverished people. If I thought it would be to you a matter of interest, I would give you the *data* upon which the opinion is founded. But I presume you are overwhelmed with correspondence, and I write now only on a matter of business."

Hon. Marshall P. Wilder, Dorchester, Massachusetts, the well known President of the U. S. Pomological Society, writes: "I am pleased with the revival and fine appearance of your paper. Here are two dollars for the year. Please send every number."

Andrew G. Kennedy, Esq., Jefferson Co., Va., says: "As the time for seeding timothy is near at hand, I will give you a plan which I have followed with success: On the ground, ploughed and harrowed for wheat, sow, before the first of September, with the broadcast sower, about one peck of seed to the acre, and then roll with wooden roller. Drill your wheat about the first

of October. In cutting the hay, I use my reaper just as it is fixed for cutting wheat, except rather more lowered. The grass is allowed to accumulate on the board in as large heaps as the board will accommodate; it is then raked off and left to cure in the heaps, and when cured, hauled in from the same heaps. This mode saves labour, and, if the cutting is done at the right time, the hay will cure perfectly."

Dr. B. P. R., of Dinwiddie Co., Va., writes: "As I would welcome an old friend, so did I the July number of the *American Farmer*. It came just in time to supply a want. It was handed to me by a friend while at church, and though it is not my custom to read secular papers on the Sabbath, yet the temptation was irresistible to examine it as I rode in my carriage home, to see what had become of such an esteemed old friend during the trying ordeal we had passed. I wish I could write something of interest for your valuable paper, but really the present and future seem so dark and discouraging, that one has but little heart to chronicle the times, or prophet the future.

"The wheat crop is an entire failure; but few will have any for market, and many will not make seed. The corn crop at present is gloomy, on account of the long drought, but it is not too late as yet to make a good crop, though it must be somewhat shortened. The tobacco crop will, I think, be a short and inferior one. The land that was good, and that is guanoed, and planted early, is running up, and buttoning, and, of course, can never be as it should. The poorer lands and late planted, will be inferior. I do not think half the surface is planted that formerly was, owing to the uncertainty attending the necessary labor.

"I find it to be the experience of all, that the only way of getting any thing out of the freedmen, is for the white man to take the lead, and tell him to follow. This, of course, can be done by comparatively few at the South, as they have not been accustomed to field work. We are consequently forced to the necessity of dividing up our farms, and renting them out to the white labouring class, who, with a few freedmen, may make it profitable, but to the landholders ruinous; as the man that rents land seldom improves, and ultimately, under this system, our lands will be exhausted. I have said nothing about foreign white labor, as I am convinced at present it will not do."

Under the present system of yearly renting, the remarks of our correspondent are no doubt correct. But it will be necessary gradually to

change this for long and improving leases, which will ultimately profit landlord and tenant.—*ED. FARMER.*

L. A., of Shenandoah County, Va., writes: "I received the July number of the *American Farmer*, and am delighted once more to have it. I had been a subscriber for many years till cut off by this unholy war, which devastated our beautiful Valley. Twenty thousand dollars of good money would not cover my losses, but thank God, with the return of peace, I have my land and buildings, &c. I raised a fine crop of corn last year, fenced up last winter, and now have 140 acres of corn looking pretty well. I have just finished cutting my wheat of 100 acres, which will thrash, I think, 12 to 15 bushels per acre. In my immediate neighborhood the wheat is much better than in any other part of the Valley. In Western Virginia there is scarcely any. The hay crop very short.

"I bought one of Calvin Page's combined mowers and reapers, self-rake. I am delighted with it. Our old reapers were burned by our glorious Union General Sheridan. We forgive our kind friends for the destruction done to save us from the Devil, but when we come to be admitted at the doors, why do they turn their backs on us? We know they are Christians (so-called.)

"This county will hardly make seed and bread, especially in the limestone land. I have 140 acres of river bottom that never fail, and part has never been in gear. Has been farmed for upwards of a hundred years in corn and wheat—40 to 50 bushels of corn, 18 to 20 of wheat."

A few more extracts from "OLD FRIENDS."

"I have to offer you many thanks for your kindness in forwarding to me again my old friend, 'The American Farmer.' The perusal of the two numbers received, has already inspired me with new hopes, and partially renewed my waning energies," &c.

J. H. E., Coleraine, N. C.

"I glory in the reappearance of the 'Old American Farmer' upon the stage of life; with a higher, nobler and purer bearing (if possible), than of yore. I read it as a boy when the Ruffins, Newtons, Jones', Calverts, Pendletons, and Caprons, were wont to hold pleasing converse over mother earth. I have continued reading it in my manhood, when directed by other heads and hands, but never with greater satisfaction and instruction than now."

G. H., Snow Hill, Md.

"You cannot tell the gratification I felt on receiving your publication—very much like an old friend, long absent, affording delight at his return."
D. S. C., Williamsburg, Va.

"I rejoice to see your journal revived, because I regarded it, and so expressed myself, as the best of all the agricultural journals of the country."
E. C. E., Montgomery County, Pa.

"I enclose you \$2 for subscription to your valuable Magazine, which I was glad to see again. I think you will sustain your former reputation, and congratulate you sincerely on your reappearance."
J. W., near Richmond, Va.

"Please find herein \$2 for subscription to my good old friend, the *American Farmer*. Receive my thanks for having thought of me after so long a time."
E. L., Cincinnati.

"You can form no idea, how pleased I was to see again the familiar face of the *Old Farmer*. You may consider me a subscriber as long as I own a farm, or can pay for a newspaper."
F. M. H., Newbern, N. C.

"The *Farmer* came to hand a few days since, bringing an account of its long absence, and was received with more than wanted pleasure."
W. C. W., Posterville, Tenn.

CUBA AND CONNECTICUT TOBACCO.—The correspondent who makes inquiries as to peculiarities in the mode of cultivating these varieties, is informed, that there is nothing materially different from the practice in Maryland and Virginia. The Cuba tobacco is a much more delicate growth than ordinary sorts, with leaf of finer texture, needing careful handling, and may be planted much more closely. Ten thousand plants may very well grow upon an acre, at two feet each way, or three by one and a half.

The Connecticut seed leaf is a very large growth, being planted usually on rich and heavily manured lands, and yielding enormous crops, ranging from fifteen hundred even up to three thousand pounds to the acre, as we find reported. The plants need, of course, much more room than common kinds.

The St. Paul *Pioneer* says that on the Red River settlement, 500 miles north of that place, 60 bushels of wheat to the acre is an ordinary yield.

Notices of Agricultural Journals.

THE MARYLAND FARMER—A *Monthly Magazine*, devoted to *Agriculture, Horticulture, Rural Economy and Mechanic Arts*. Volume III, No. 8. S. Sands Mills & Co., Publishers, No. 24 S. Calvert street.

THE RURAL GENTLEMAN—A *Monthly Journal*, devoted to *Horticulture, Agriculture and Rural Economy*. J. B. Robinson & Co., Publishers, No. 2 North Eutaw street.

Among many labourers who have entered the field of Agricultural Literature within a few years, we have occasion to notice first, two very near neighbours, named above. The former is the *Farmer and Mechanic* of Mr. Ezra Whitman, published before the war, mainly to advertise his large manufacturing business, and now developed, through the enterprise and energy of Mr. Mills, into a first class Agricultural Magazine. The numbers before us are filled with a variety of useful matter, indicating discrimination and judgment, and we wish it the most ample success.

The *Rural Gentleman* presents itself in the number before us, for the first time, and proposes to devote itself "entirely to practical rural life." Its pages are well filled with good matter, ranging through the extended fields of agriculture, horticulture, and floriculture. It makes fair promise for a future which will be very useful to the agricultural community, and very profitable, we hope, to its proprietors.

We must engage these young neighbours of ours in the special duty of stirring up the supine and laggard farmers of Maryland to a sense of their duty in support of the agricultural press. Of the thirty thousand farmers of Maryland, we have nothing like ten thousand yet upon our own list, and some means must be devised of bringing them every one into the line of progress. They can hand us over the first ten thousand that fall in, which is all we shall claim, and divide the other twenty thousand between them, and when the whole thing is done we shall get along very comfortably together, so far as Maryland is concerned. Outside of the State, as neither of us have any special rights, each must hoe his own row, among other able competitors, and make the most of his opportunities.

THE SOUTHERN CULTIVATOR—A practical and Scientific Newspaper for the Plantation, the Garden and the Family Circle. D. Redmond, Augusta, Ga.; W. N. White, Athens, Ga. \$2 per annum.

This long established and very able Magazine

of Agriculture stands at the head of the list of valuable Journals that are doing faithful service in behalf of Southern Agriculture. It is the only one South of New York, we believe, which maintained itself throughout the fearful four years' struggle. It goes now on its way prospering, and to prosper, as we hope. We are certain, at least, that the success which marks its course, will be a sure index of the advance of agricultural improvement in the South. Long experience, sterling good sense, and knowledge of rural affairs, both theoretical and practical, are distinguishing qualities of the *Cultivator*.

THE FARMER—Devoted to Agriculture, Horticulture, the Mechanic Arts and Household Economy. Elliott & Shields, Richmond, Va. \$3.00 per annum.

THE FARMER takes the place, long, so ably filled by the *Southern Planter*, and now issues its eighth number. It is, we learn, in the hands of gentlemen abundantly able to make it the worthy organ of the great farming interests of Virginia. Its present issue gives sufficient assurance of this, in a number of articles of superior merit, and the variety of its table of contents. It is very worthy of, and we trust will get, a hearty and generous support.

THE RURAL JOURNAL—Devoted to Rural Life, Agriculture, Mechanics, &c.

Is a spirited and well conducted Journal of eight quarto pages, with the imprint of that enterprising firm, Wm. B. Smith & Co., of Raleigh, N. C.; subscription, \$1.00.

The Journal seems to be designed to relieve the pages of our old friend and favorite, *The Field and Fireside*, of its agricultural matter, and to give it to the farmers in separate form, at a low price. It deserves to be well sustained.

THE SOUTHERN RURALIST. Amite City, La., H. A. Swasey & Co., Publishers. \$3.00 per annum.

This is a semi-monthly Journal of twelve quarto pages in covers, devoted to Agriculture and Rural affairs. It is the only representative of the agricultural interests of the great Southwest, and is started under favourable auspices for great success, which it eminently deserves by the quality of the matter offered its readers. It is edited by H. A. Swasey, M. D., aided by a large corps of assistants.

This makes up our list of Southern Agricultural exchanges as yet received.

THE FIELD AND FIRESIDE.—This publication was well and favorably known before the war, having been established in 1855. It was design-

ed as a family, literary, and agricultural weekly of the first class. As suggested above, it has given its Field side rather the go-by, and claims to be "devoted to all the highest and noblest purposes of pure and dignified literature." A Journal of such aims should have the support which will enable it to realize, to the utmost, its lofty aspirations.

Published by Wm. B. Smith & Co., Raleigh, N. C. \$5 per annum.

The following notice of the *American Farmer*, is so much more than an ordinary expression of newspaper courtesy, and is so well conceived, and appreciative, that our readers will pardon our putting it on record. The *National Defender* has not been heretofore on our exchange list, and we are indebted to some unknown friend, who by sending us a copy with this notice, introduces us so pleasantly to this spirited and able *Defender* of the right:

From the *National Defender*, Norristown, Pa.

THE AMERICAN FARMER.—This very able and justly popular Agricultural Magazine, has, after a season of temporary suspension—occasioned by the late saddening civil war—resumed publication, and we hail its reappearance with a feeling of earnest satisfaction. No periodical work within the limits of our information, so commends itself to the patronage of the farmers of Montgomery county, as does this admirable serial, each number of which is filled with matter whose value has only to be known to be appreciated. The Magazine is the oldest in the United States, and has always been looked upon as a text book of the subjects upon which it treats. In it the farmer will find a vast number of practical suggestions relative to his pursuits, coupled with the experiences of distinguished agriculturists in the various branches of his vocation. The Middle and Southern States are the special fields of its labors, and the principal crops which are cultivated therein, receive, in its pages, a very careful and critical analysis; indeed, we know of no purely agricultural work which conveys, in a more pleasing and satisfactory manner, that knowledge which the intelligent husbandman deems essential to a successful prosecution of his profession.

The *American Farmer* is published in Baltimore, and issued monthly to subscribers at the extremely low rate of \$2.00 per year. Each number contains upwards of 36 pages. Subscriptions should be forwarded to the publishers, Messrs. Worthington & Lewis, No. 52 South Gay street, Baltimore, Md. The Southern patronage

upon which these gentlemen particularly relied, was necessarily cut off from them during the pendency of hostilities, and they were thus compelled to wait until the storm of war had passed, before resuming duties which, as their prospectus states, are alone for "seasons of quietness." That their counsels may contribute to make green with grass and teem with golden harvest, the desolated fields of the South, and to restore the hamlet from its ruin and once again replenish the blood-stained soil with abundance, is a hope which we can sincerely express, and in whose fruition we shall most earnestly rejoice. We commend the work to our readers not only as a source of practical interest and instruction for themselves, but because its teachings will serve to create a kindlier sentiment between the once warring sections, and reanimate the sentiments of good will which have been so long and so unhappily interrupted.

We have had occasional inquiries, as to whether seed wheat, fertilizers, &c., may be had of merchants here on the pledge of proceeds of crop of wheat to be made. On receipt of the first one, we made inquiry, and ascertained that while this has been done frequently, the cases were only exceptional, and in favour of old correspondents and customers. With the most liberal disposition on the part of the great majority of our business men to extend help to those who need it, it will be readily understood, on reflection, how very far their ability must fall short of meeting even the most urgent claims which have grown out of the wide-spread losses of our Southern friends.

Acknowledgments.

We are indebted to Sandford Howard, Esq., Secretary of the Michigan State Journal of Agriculture, for his Fourth Annual Report, an octavo of more than three hundred pages of valuable agricultural matter.

We are indebted to Edward J. Evans & Co., York, Pa., for their several Catalogues, Nos. 1, 2 and 3, of Fruit and Ornamental Trees and Shrubs, Vines, Roses, Native Apples, &c. They may be had at our office, or on application, by letter, to York. See their advertisement.

BUSINESS NOTICE.—We beg that every one who writes to us on whatever subject, but especially with reference to subscriptions, will write distinctly his own name, and the name of his post office. In case of removal, name also the office removed from.

Advertisements.

We need hardly direct the attention of readers to our advertising pages, as we know they are always examined with peculiar interest. It is a pleasure to us, however, to be able to bear testimony to the high character of our advertisers in their several departments. Apart from our well considered opinion on this point, it may be assumed generally, that the best business men, and the most satisfactory to deal with, are those who, seeing most promptly in what direction lies their own interest, are as prompt to see how they may most directly approach the best class of custom. We have here a case in point. Many of our former advertisers, who long experienced and acknowledged the *American Farmer* to be, to them, the best, if not only, medium of advertising of much value, are holding back in abundant caution, perhaps, as if our publication were an experiment, or as if we stood to the agricultural community in the position of an aspirant for favour. Our present advertisers have seized at once the advantage of the fact, that we started at once with our full list of old subscribers or their representatives, unimpaired but by exceptional cases, which are fully made up by new ones.

In our advertisements of Fertilizers are found the well known firm of John S. Reese & Co., so long and favourably known to the agricultural community.

Ober & Co., of the old house of Kettlewell & Ober, famous for their well directed enterprise and energy.

Wm. Crichton & Son, successors of the old and wealthy firm of Malcolm & Co.

George Dugdale, agent for the manufacturer of Baugh's Rawbone Phosphate, which has worked itself into great favour in many sections.

The *Baltimore City Fertilizing Manufacturing Company* is an enterprise of very great promise to the agricultural community. J. J. Stewart, President; Wm. H. Kimberly, Secretary.

Allen & Needles, of Philadelphia, also, old and well known manufacturers of Super-Phosphate.

Of Implement Manufacturers and Dealers, we have, as ever—

Sinclair & Co., a Baltimore institution of the last half century, with no falling off in their well earned reputation.

Richard Cromwell, who, though of fewer years, has full as fair a fame.

E. G. Edwards, who, among other valuables in this line, offers the famous Bickford & Huffman Drill.

All these furnish Seeds too, and in this line, we have, also, D. Landreth & Son, of Philadelphia;

C. B. Rogers & Co., Philadelphia; Thomas Meehan, Germantown, Penna.; Wm. Hacker, Philadelphia, all old familiar names to our readers, and of first class standing.

Of Portable Steam Engines, Saw Mills, Sorgho Mills, &c., we have—

E. B. Duvall & Co., of long experience in the Southwest, with their factory at Laurel, and their place of business, 24 S. Howard street, a firm as full of energy as their own engines. No one should fail to call on them, who is interested in the matters they advertise.

Poole & Hunt are long established, and of well known character, in somewhat the same line.

Of Nurseries we name, first,

Cromwell's Patapasco Nurseries, where all sorts of the best things in the way of Fruits, Flowers, Ornamental and Evergreen Trees grow; and we may say in further commendation, our friend Cromwell grew there himself, and his father before him.

Edward J. Evans & Co., at York, Pa., have built up in a few years comparatively, a very flourishing business and present very attractive catalogues.

Ellwanger and Barry are of world-wide fame, and the many, hundreds of acres in Nurseries near Rochester, are the wonder of those acquainted with them.

Hightstown Nurseries, New Jersey. Our old friend Pullen, among numerous things remarkable and otherwise, has any quantity of Peach trees that ripen their fruit two weeks earlier than anybody's else.

John Saul, near Washington, presents also an attractive list, of very reliable character.

Of *Pianos*, Mr. Benteen offers the celebrated Steinway, and others, with piano and organs.

Otto Wilkens is manufacturing his own pianos, and his own fame at the same time. He makes a first rate instrument.

Samuel Hunt makes the best Saddles, Harness and Trunks in Baltimore, so far as we know, and knows best where to advertise them.

S. S. Stevens & Son, are great manufacturers of a great deal of good furniture for houses.

Hamilton Easter & Co. have a long time stood at the head of Baltimore dry goods dealers, because, *perhaps*, they have a long time advertised in the *Farmer*.

Oakley & Kenting, New York. The Nonpareil Washing Machine, thought to be one of the best of its kind. Richard Cromwell, agent in Baltimore.

Horse Stables.

It is a fault with most stables that they are built for men rather than for horses. We wish to point out two common errors into which not a few builders are liable to fall in constructing stables, especially those upon farms. The first is in having the doors and upper floor so low as they generally are. On account of these low doors horses instinctively learn to fear them, and they shy, rear or prance whenever led toward them. They are, also, among the most frequent causes of poll-evil. The horse, when passing through them, is either surprised by something it beholds outside the building, or checked by the voice or gesture of the person leading him, when up goes the head and crash comes the poll against the beam of the doorway. A violent bruise often results therefrom, and a deep-seated abscess follows. Low hay-floors also produce the same trouble. The sudden elevation of the head is, in the horse, expressive of very unexpected emotion. This effect is always noticed whenever you enter the stable rapidly or at an unusual hour. A sudden noise will also cause the same upward motion of the head. With low stables an injury to the horse is almost invariably sure to follow.

Again, the easiest position in which the horse can stand, is when the hind feet are the highest portion of the body, or when the flooring of the stall slants in exactly the opposite direction from what it does in most stables. This is the other error in constructing stables, to which we alluded. Horses at liberty in a pasture invariably stand, when at ease, with their hind feet elevated somewhat, and it is almost a wonder that builders of stables have not improved upon this fact before, and adapted floors to the wants of the horse. The moisture from the horse, if the floor slanted toward the forward feet, would help to keep the forward feet moist, cool and healthy, whereas they are now generally hot, full of fever, and require washing with cool soap suds at least once a day, in order to be kept in a healthy condition. This is not all. Where the floor slants back, the horse not unfrequently attempts to ease the heavy strain upon the flexor tendons of the hind legs by hanging back upon the halter. The pressure upon the seat of the poll stops natural circulation, and in time it develops itself into a deep-seated abscess. We would like to see a stable in which the two errors in building we have pointed out did not occur. If the builder was not satisfied with it, we are sure the occupant would be, and would repay him by long years of good service with unstrained limbs and a healthy system.—*Maine Farmer*.

A Maine Farm.

No one at all interested in farming can spend an hour upon a well appointed and well tilled farm (even though it be no better than others that may have been visited) without receiving some benefit from viewing the arrangement of the buildings, the plan of the several enclosures, and conversing with the owner about the general management of his farm. So in the hour or two spent upon the farm and about the buildings of Major Davis, a week or two since, one mile west of this city, (Augusta,) on the old road to Winthrop, we saw much to approve in his system of management, and much that might be imitated by other farmers to good advantage. The farm consists of one hundred acres, is well divided into mowing, tillage, pasturages and wood land; has some of the best soil in the country; is completely fenced, and provided with good buildings that are well arranged and contain all the necessary fixtures for convenience and the saving of labor; is provided with an abundant supply of good water, and has upon it a young orchard of one hundred trees.—Last year Mr. Davis cut one hundred tons of hay, mowing over about forty acres to obtain it. His general course of husbandry is to break up in the fall what land is wanted for planting the next spring, usually from six to eight acres, plant it with corn, potatoes, beans, turnips, &c., and the next spring sow it to barley and oats, and seed it down. No land is kept up longer than two years, is liberally manured, and much of his permanent grass land receives a top-dressing of old, well rotted manure, (about ten cords to the acre,) immediately after haying. The farm stock consists of six cows, two horses and two mules, besides from three to six hogs. The chief part of the hay is sold, and manure from our city stables used to make up for that which would otherwise be made upon the farm. The cows are stabled every night, loam being placed in their stalls to absorb, save and add to the manure, which, with manure from the horse stalls and leam from the road side—which Major Davis regards as better than muck—is handed over to the working of three store hogs, who convert it into a superior article of dressing.

From a field of grass of six acres that we visited, and which was cut for the first time after being seeded last summer, seventeen tons of hay were obtained. The tools and implements are all housed when not in use. A cistern holding over one hundred hogsheads receives the water from the barns, thus furnishing an abundance for stock during the winter, and the premises are neat and in good order. For a farm team Major

Davis uses a pair of mules, and regards them as better than either oxen or horses. They are tough and strong, cheaply kept, and will perform a larger given amount of work, at less expense, than any other team. He believes that farmers might make a more general use of them to good advantage. All the crops upon the farm look promising, and betokened a high degree of cultivation and good management.—*Maine Farmer.*

Boiling Food for Hogs.

At a meeting of the New York Farmers' Club, Prof. Mapes made the following remarks in regard to boiling food for hogs:

"The proof of the saving of food by boiling has been given here; we may as well have it. Mr. Mason was a watchmaker in Camden, N. J., and among other fancies he liked to keep hogs. He had his hog pen built just back of his shop, so that he could sit at his window and watch his hogs. Every spring he bought some pigs and fed them through the season. Just opposite to Mr. Mason was the store of Mr. Van Arsdale, and every pound of food that Mr. Mason gave to his pigs he bought at this store. At the end of six months he got his bill from Mr. Van Arsdale, and he always slaughtered his hogs at the same time, so that he knew exactly how much his pork cost. For several years it figured up at 13 cents per pound. At length some one advised him to boil his corn. He accordingly got a large kettle and cooked all the food which he fed to his pigs. Then his pork cost him 4½ cents per pound. We also had the experience of Mr. Campbell, which was about the same as Mr. Mason's. Henry Ellsworth made some extensive experiments in the same thing, and his statement is that thirty pounds of raw corn make as much pork as thirteen pounds of boiled corn."

Bone Charcoal.

Bone charcoal is made by heating bones in closed vessels, called retorts. The gases which pass off during the heating, contain carbonate of ammonia; these are condensed in water. The liquid is then mingled with fine ground plaster. This contains sulphate of ammonia and carbonate of lime. The liquid is then drawn off from the chalky carbonate of lime, and the ammonia salt is obtained by evaporation. The bones are now heated again to drive off the volatile substances. They are then broken down and pulverized, and they may now be used as a fertilizer.

Never insult misery, deride infirmity, nor despise deformity.

White Thorn Hedge.

In parts of Virginia, fences and the material for constructing them having been destroyed, it occurs to me that a statement of a simple fact may prove beneficial to many, even to some whose fencing material is abundant.

The common white thorn, well known in this region, forms a most effective fence, is very ornamental, and more beautiful than even the celebrated hawthorn hedges of England.

I first became acquainted with the value of the white thorn for fencing purposes at Natchez, Mississippi, where a friend had introduced it on his own place with very beneficial and satisfactory results.

This variety of the thorn may be better known and more extensively used in Virginia than I am aware of, but never having seen it under cultivation in this State, either for ornament or for field protection, and finding it growing abundantly here, I have determined not only to inclose my yard and garden with it, but to put it wherever a permanent fence is required.

As if nature intended it to facilitate man's labors, the white thorn grows very readily from cuttings, as readily as the grapevine, and also yields abundantly small, red, cherry-like seeds, from which a nursery of the thorn may be established while the farmer is deciding where to have his permanent live fences, and by this means complete his hedge sooner than from cuttings.

The cuttings which I planted out a few weeks ago are now growing, and the plants which I found growing from the seeds, probably two years old, being from two to three feet high, on being transplanted grew off at once.

The flower is white and very odoriferous, and the hedge, when well trimmed and in full bloom and foliage, is only second in beauty to the coffee plantations in bloom in the island of Ceylon.

The following directions are offered for setting a hedge of white thorn, or, as it is called in Mississippi, "Virginia thorn," namely:

Dig a trench six inches wide and eight or ten inches deep. If the ground is not rich, make it so by mixing good manure with the dirt from the trench, fix the trench with the earth and manure, and while loose, stick the cuttings in six inches apart, in two rows, thus: and press the dirt well around them. Keep the hedge free from grass and weeds, and in four or five years you will have a beautiful hedge or very effective fence, if properly pruned and cultivated.

I have observed often that people go to the expense and trouble of sowing the osage orange seed, and then leaving them to grow among grass and weeds, and when the seed has sent

forth a thrifty shoot, even in all its disadvantages, instead of properly trimming and training the long switch-like branches, and forming an effective hedge, they send a careless negro to cut them down, perhaps with a dull axe, and when they again grow up, this process is repeated, and then the osage orange is pronounced a failure; and so it will be with many who try the white thorn. They will plant it out carelessly, then neglect it, and finally pronounce it a humbug. Those who do not intend to do the work so as to benefit by it, ought not to attempt it.

If this benefits only one farmer, or enables only one lady to adorn her home with this beautiful hedge, I shall be fully repaid for my labor in writing this.—THOS. J. FINNIE, in *Virginia Farmer*.

The London Dairies.

Mr. Morton has lately read before the Society of Arts a very interesting paper on this subject. Contrary to expectation he found such a state of affairs in the London Cow-houses, as to lead him decidedly to the following conclusions: 1. That the establishments themselves need not be, and often are not, nuisances; 2. That the milk made in them is better than that delivered by railway from the country; 3. That it is wiser and better to carry the roots, grass and hay from the country into town, than one-sixth their weight in milk itself; 4. That cows in London are, and may be healthy, and comfortably kept, and that they are no more liable to disease than when at large in country pastures; 5. That, in fact, London is "better supplied with milk than most south-country villages." The very thorough examination of the Dairies in the city which he has been conducting, gives great weight to the opinions expressed. Mr. M. refers to the circumstances which lead London cow-keepers to adopt the best systems of management, and has "no doubt that the milk yielded by a London cow is better than that which the same cow would produce under ordinary Gloucestershire or Cheshire management." Mr. Morton, it should be remembered, is not a city man, and is quite familiar with the dairies of England and Scotland. To secure a license as cow-keeper, the cow houses must contain at least 1,000 cubic feet per head, in order to prevent too great crowding.

PROGRESS OF VINEYARDS.—In 1840, the lamented A. J. Downing, first editor of the *Horticulturist*, estimated the vineyards of the States at 3,000 acres. May we not now estimate them at 100,000 acres? What say our grape men?—*Horticulturist*.

Sunday Reading.

It is observable what the Rabbins have delivered, that at the morning sacrifice, the priests, under the law, did bless the people with the solemn form of Benediction, but at the evening sacrifice they blessed them not; to show that in the evening of the world, the last days, which are the days of the Messiah, the benediction of the law should cease, and the blessing of Christ take place. When Zachariah the priest, the father of John Baptist, the forerunner of Christ, *executed his office before God in the order of his course, and the whole multitude of the people waited for him, to receive his benediction, he could not speak to them, for he was dumb; showing the power of benediction was now passing to another and far greater Priest, even to Jesus, whose doctrine in the mount begins with "Blessed," and who, when he left his disciples, "lift up his hands and blessed them."*

Till now, human nature was less than that of the angels; but by the Incarnation of the Word, was to be exalted above the cherubims; yet the Archangel Gabriel, being despatched in embassy, to represent the joy and exaltation of his inferior, instantly trims his wings with love and obedience, and hastens with this narrative to the Holy Virgin; and if we should reduce our prayers to action, and do God's will on earth, as the angels in heaven do it, we should promptly execute every part of the Divine will, though it were to be instrumental to the exaltation of a brother above ourselves; knowing no end but conformity to the Divine will, and making simplicity of intention to be the fringes and exterior borders of our garments.

Whatever you write, it has no relish for me, unless I read there Jesus. Whatever you say in dispute or conference, it has no relish for me, unless it speak of Jesus. The name of Jesus is medicine to the soul. Nothing so checks the violence of anger, allays the swelling of pride, heals the wounds of envy, restrains the flow of wantonness, extinguishes the fire of lust, slakes the thirst of covetousness, and puts to flight the temptation to every impure affection. For when I name Jesus, I represent to myself the man, "meek and lowly," and of a loving heart, sober, chaste, pitiful; in a word, conspicuous for all purity and holiness, and at the same time Himself the Almighty God, who, while he heals us by his example, strengthens us by his aid. All this speaks to my heart, as soon as the name of Jesus sounds in my ear.

The Providential congruities between the times of the Old and New Testament, as a learned writer styles them, do very much confirm the authority of both Testaments. From hence we learn that the Scriptures comprehend one entire scene of Providence, which reaches from one end of the world to the other; and that God, who is the beginning and end of all things, by various steps and degrees pursues one great design, viz: the setting up the kingdom of His Son, through the several ages of the world, and will still carry it on by such measures, as seem best to His infinite wisdom, till the great day of the consummation of all things. Such a gradual opening of this wonderful scene of Providence is a new argument of that infinite wisdom which contrived it, and which so fully justifies this mystical way of propounding it.

Some have observed that such as are born of parents who have been childless and aged, have proved very famous; for they seem to be sent on purpose by God into the world to do good, and to be scarce begotten by their parents. Such are something like Isaac, who had a great blessing in him, and seem to be intended by God for some great service, and work in the world.

I love to lose myself in a mystery, to pursue my reason to an *o altitudo*! I can answer all the objections of Satan, and of my rebellious reason, with that odd resolution I learned of Tertullian, *certum est, quia impossibile est*! I desire to exercise my faith in the difficultest points; for to credit ordinary and visible objects, is not faith, but persuasion.

I am a Christian; what I believe is beyond my understanding.

The belief in the doctrine of the incarnation is necessary—(not only to ensure the original purity of our human nature in the person of our Saviour; for as S. Augustine says, *Si esset in Illo peccatum, auferendum esset Illi, non Ipse auferret*, but also)—to teach us whence our own purity and holiness must flow. We are commanded to be holy, and that, even as He is holy. We bring no such purity into the world, nor are we sanctified in the womb; but, as He was sanctified at his conception, so are we at our regeneration.—(*St. John*, i, 13.) The same overshadowing power which formed His human nature, reformeth ours; and the same spirit assureth us of remission of our sins, which caused in Him an exemption from all sin. He, which is born for us upon His incarnation, is born with us upon our regeneration.

AMERICAN FARMER—ADVERTISER.

Gapes in Chickens.

The *New-England Farmer* pronounces the common opinion about this malady being produced by some worm which is generated in the throat, as incorrect. It says the cause is colds and sore throats, which the chickens get by wandering in the wet grass. It asks how many chickens' lives anybody ever saved by running feathers down their throats to scoop out the worms. It says the true remedy is administered before the disease makes its appearance, and that is, to confine the chickens away from the early morning grass.

Baltimore Markets, Aug. 24.

ASHES.—Pot, \$8.25a\$8.50; Pearl, \$15.50a\$16.00 per 100 lbs.

COFFEE.—Rio, 17½a20c. gold, according to quality. Laguayra 19½, and Java 20 cts. gold.

COTTON.—We quote prices as follows, viz:

Grades.	Upland.	Gulf.
Ordinary.....	25	28
Good do.....	28	31
Low Middling.....	31	33
Middling.....	33a38	39

FERTILIZERS.—Peruvian Guano, none in agents' hands; Patapasco Company's Ammoniated Soluble Phosphate, \$63, in bags or bbls.; Baugh's Rawbone Phosphate, \$56; Turner's Excelsior, \$75; Ammoniated Phosph., \$60; Dissolved Bone, \$55; Fine Ground do., \$45; Baltimore Phosphate, \$60; Solu. Pacific Guano and Flour of Bones, \$65; Ober's Potash Fertilizer, \$45; do. Super-Phosphate of Lime, \$60 per ton in bags; Fowle, Bayne & Co.'s Manipulated Guano, \$75; do. Ammoniated Phosphate, \$55; do. Compound of Phosphate, \$45—all per 2000 lbs.; do. Plaster and Potash, \$4.50 per bbl.

FISH.—Mackerel.—No. 1, \$23a27; No. 2, \$18a24; large new, No. 3, \$14a15.00. Herrings.—Shore (split,) \$5a6; Labrador, \$5.50a6.50; Potomac and Susquehanna, \$3.50a9. Codfish, new, \$8a9.

FLOUR.—Howard Street Super and Cut Extra, \$10 50a \$10.75; Family, \$14.50a15.00; City Mills Super, \$10a 10.50; Baltimore Family, \$16.

Rye Flour and Corn Meal.—Rye Flour, new, \$5.50a 5.75; Corn Meal, \$4.50a4.75.

GRAIN.—Wheat.—Inferior to fair Red, \$2 a2.55; prime to choice Maryland, \$2.60a2.75. White, \$2.65a2.85 per bus. Corn.—White, \$1; Yellow, 90a92c. per bushel.

Rye.—95c.a\$1.00 per bushel.

Oats.—Heavy to light—ranging as to character from 44 a45c. per bushel.

HAY AND STRAW.—Timothy \$21a23, and Rye Straw \$20 per ton.

BEANS.—Common, \$1.50a2.40 as to quality.

POTATOES.—\$3.50a4.00 per bbl.

PROVISIONS.—Bacon.—Shoulders, 17½a17½ c.; Sides, 20½a20½ c.; Hams, plain bagged, 23c.; sugar cured, 24a 26c. per lb.

SALT.—Liverpool Ground Alum, \$2.10a2.15; Fine, \$3.10 a3.25; Turk's Island, 60c. per bushel.

SEEDS.—Clover, held at \$7.50a7.75; Timothy, \$5a5.50; Flaxseed, \$3 50a3.55.

TOBACCO.—We give the range of prices as follows:

	Maryland.
Frosted to common.....	\$2.00a 3.00
Sound common.....	3.50a 4.00
Middling.....	5.00a 5.50
Good to fine brown.....	10.00a15.00
Fancy.....	17.00a25.00
Upper country.....	3.00a3.00
Ground leaves, new.....	3.00a12.00

Ohio.

Inferior to good common.....	5.00a 8.00
Brown and spangled.....	9.00a12.50
Good and fine red and spangled.....	14.00a17.00
Fine yellow and fancy.....	20.00a30.00

WHISKEY.—\$2.35 per gallon, in barrels.

WOOL.—We quote: Unwashed, 30a32 cts. per lb.; Tub-washed, 50a53 cts.; Fleece, common, 43a45 cts.; Fine, 50 a55 cents; Palled, No. 1, 30a35 cts.; Merino Palled, 42a46 cents per lb.

CATTLE MARKET.—Common, \$6.50a7; Good, \$8a8.50; Prime Beeves, \$9 per 100 lbs.

Sheep—5a6 cents per lb. gross.

Hogs—\$15.50a16.00 per 100 lbs., net.

Wholesale Produce Market.

Prepared for the *American Farmer* by ELLICOTT & HEWES, Produce and Commission Merchants, 67 Exchange Place.

BALTIMORE, Aug. 22, 1886.

BUTTER.—Ohio, in brls. and kegs, solid packed, 25 to 28 cts; Roll, 35; Virginia and Pennsylvania in kegs and tubs, 28 to 30; Glades, 35; Goshen, 40.

BEESWAX—42 cts.

CHEESE.—Eastern, 22; Western, 18 to 20.

DRIED FRUIT.—Apples, 17 to 19; Peaches, no supply.

EGGS.—In barrels, 20 cents per dozen.

FEATHERS.—70 cents for good Southern.

LARD.—Bris, 22, eggs 23, jars and other country packages 25 cents.

TALLOW.—12 cents.

CONTENTS OF THE SEPTEMBER NO.

Farm Work for the Month.....	69
The Vegetable Garden.....	70
The Fruit Garden.....	71
The Flower Garden.....	71
Lawns and Parks; Deterioration of Seed.....	72
The Pine Hills of Georgia.....	73
Top Dressing.....	74
Fruit Department—The Concord Grape.....	75
Grapes; Keeping Grapes.....	76
Propagating Grape Vines; Packing Fruit; Apple Tree Borer; How to Make Wine.....	77
A Plea for the Toads; How to Keep Milk Sweet.....	78
On the Part which the Atmosphere and the Soil Respectively Play in the Development of Vegetation and the True Theory of Agriculture.....	79
Incombustible Wash.....	82
Poultry.....	83
How we Manage our Poultry in Summer; A Year of the Cattle Plague in England—Official Statement..	84
Sweet Herb Culture; Cure for Heavy Horses.....	85
What our Lands are Worth.....	86
Strawberries; The Agricultural College.....	87
Clover Culture.....	88
Fruit Growing.....	89
Scientific Reading.....	90
Instruction in Fruit Culture; "The Lost Subscriber." ..	91
Fertilizers; Our Correspondence.....	92
Notices of Agricultural Journals.....	94
Acknowledgments; Advertisements.....	96
Horse Stables.....	97
A Maine Farm; Boiling Food for Hogs; Bone Charcoal.....	98
White Thorn Hedge; The London Dairies.....	99
Sunday Reading.....	100

FLOUR OF RAW UNSTEAMED BONE.

Price Reduced to \$60 per ton in Baltimore.

We are now prepared to supply the farmers of Maryland, Delaware and the Southern States with a *Bone Fertilizer*, such as the agricultural world has sought for in vain, since the value of bones as a fertilizer became known. Every body knows that the finer powder a fertilizer is reduced to, the more uniformly it is distributed through the soil, and the more rapid its solubility and action. This cannot be denied, and it applies with greater force to bones than any other fertilizer. Although bones have been heretofore used in a condition of comparatively coarse particles, requiring a long time for them to yield their value, yet they have acquired a reputation, after use for more than half a century—even in this imperfect condition—not attained by any other fertilizer. From their imperfect preparation they have acquired the name of a slow fertilizer, and for years the world has sought for some invention that would reduce bones to the condition of *Flour*.

This invention has at length been realized, and we are now prepared to confer upon farmers, generally, its inestimable benefits.

Heretofore, in order to give quick action to Bone Dust, acid has been used to dissolve them, but the necessity for this has now passed. Bones, reduced to the fineness of flour, do not require vitrol to render them immediately active; on the contrary, it is the opinion of the best agricultural chemists, that *Bone Flour* is quite as soluble as dissolved bone. This opinion is confirmed by experiment made this season; and, further, it is consistent with a common sense view of the nature of things.

This fact being established, the *Flour of Bone* is actually worth one-third more than dissolved bone, for this very plain reason, namely, 100 lbs. of *Flour of Bone* contains the actual value of 100 lbs. of *Bone*; while 100 lbs. of dissolved bone or super phosphate, contains only 66 lbs. of bone, the rest being acid and water, necessary to dissolve it. This is so plain that it need only be stated to perceive its truth; hence, we affirm, that one ton of *Flour of Bone* is worth one and a half tons of dissolved bone or super phosphate.

The ordinary Bone Dust cannot be compared with the *Flour of Bone*. The difference in fineness adds more than one hundred per cent. to its value, and must make a revolution in its use. Its great superiority will be so striking and manifest that no farmer who once uses the *Flour of Bone* will ever return to the use of the ordinary Bone Dust.

Further, it is an important fact that the *Flour of Bone* is prepared only by the AMERICAN BONE FLOUR COMPANY, who are the patentees and owners of the only machinery by which it can be made. This Company is composed of men of the highest mercantile standing, which affords the best guarantee of the purity of their Bone Flour. Moreover, we are authorized by them to have it inspected and analyzed by Dr. Liebig, Agricultural Chemist of this city.

We call especial attention to the Doctor's analysis, herewith published; also to the correspondence had with him on the subject, in which it will be found he confirms all we have said in regard to the vast importance of this improvement in the preparation of Bones, to the agriculture of the country.

The *Flour of Bone* is put up in tight barrels, and is branded with the Company's trade mark, and the words "Flour of Bone, Manufactured by the American Bone Flour Company; John S. Reese & Co., General Agents, Baltimore," which trade mark and brand is the guarantee of genuineness.

The Bone from which it is prepared is warranted unburnt, and to contain all the gluten and organic matter pertaining to unburnt bone. This is proved from the accompanying analysis by Dr. Liebig.

It will be noticed that this Bone contains a large per cent of ammonia, which is the result of its nitrogenous organic matter. No manufactured super phosphates or preparations, called dissolved bone, contains an equal amount of ammonia, and we are very sure none can be found containing as much Bone phosphate equally soluble.

We feel conscious that in furnishing this article to the farmers and planters of the Southern States, we are contributing vastly to the interest of agriculture.

JOHN S. REESE & CO.,

General Agents for Southern States,

71 SOUTH STREET, BALTIMORE, Md.

Is the *Flour of Bone*, prepared by the American Bone Flour Company, Pure?

The only question that any one can ask, or need ask, in regard to this *Flour of Bone* is, whether it is pure, unburnt bone, for if it is pure, then its superior value and importance is a settled fact. Now, how are we to satisfy farmers on this point? First then, it is by no means a difficult matter for us to know with certainty that this bone is absolutely pure, that it is not adulterated, and it is not a secret, for we have no secrets. In order then to test its purity, we simply take from the barrels 100 parts, say 100 ounces, or 100 grains, put it in a suitable vessel, called a crucible, then place the crucible on a hot fire, and burn the bone to a white ash, which will be done in twenty minutes, then, after cooling, weigh the ashes and see how much has been burnt away. Pure, unsteamed bone will lose fully one-eighth of its weight by burning, which is the animal matter; now if it loses less, it is certainly adulterated or steamed, for if Plaster is mixed with it, it will not lose so much, because plaster will not burn, and there is nothing that can be used to adulterate with that will burn away in the same proportion, hence this is an infallible, certain test. We have frequently tested this *Bone Flour*, and in every instance have found it entirely free from adulteration. We continue to test all that we receive, hence we are able to give our customers the positive assurance that the *Flour of Bone* prepared by the Bone Flour Company is absolutely pure; the question of value is then settled, for the value of pure bones is well known, and when reduced to the fineness of flour, their value is increased a hundred fold, and they are as quick and active as dissolved bone or Super Phosphate, and are worth vastly more.

JOHN S. REESE & CO., BALTIMORE, Md.

